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- 5 top-end CRT displays
- Final Cut storyboarding
- Mobile Mac: Email tips
- Hello! How to master iChat

NO CDs? PLEASE CONSULT YOUR NEWSAGENT

Read me first

The prospect of a UK Apple retail store is a giant leap forward for Mac shoppers.

Simon Jary
editor-in-chief

What's in Store

I bought my first Mac in 1990 – the LC was the first I could afford for home. To buy it I had to journey to a light-industrial estate in a part of Basildon that even the town-centre residents of that concrete Essex new-town regarded as a barren, soulless wasteland. I didn't have a car, so I had to get my mum to drive me to the Apple Centre – hugely embarrassing, especially as she tried to find BBC2 on a 20-inch Radius CRT display, and shouted "What's this?" at me across the floor while holding up a mouse. No bus or train went there. Taxi drivers had never heard of it. If I'd walked it would have taken me several hours. Walking back with an LC, monitor and LaserWriter would have taken till Christmas... Christmas 1992.

Back in those days of 2MB memory cards (a snip at £165) the term "Apple Centre" was a bit of a joke. Finding one in the centre of anywhere – or even near the outskirts of somewhere – was an exercise in patience. Discovering one that was open after 4.30pm on a weekday or anytime on a weekend was nigh on impossible. Buying a Mac from a shop was harder than using Windows 3.0. And we wonder why the Mac's market share failed to soar...

Judging by the Macworld postbag, finding a decent shop to buy a Mac is still a chore these days. The staff at most Apple Centres are expert, friendly and willing to help, but you may have to travel a long way to reach them – and often still find they're closed at weekends. There are many more authorized Apple Resellers (often in more central locations), and these too are staffed by those in the know. Or you can click away at the impressive but impersonal online Apple Store. However, if you want to get your hands on some kit immediately, forget it. I use the online Apple Store a lot – even with a reseller less than a minute from my front door – but never if I need something in the next few days.

The only high-street names to stock Macs are John Lewis and PC World. If you know exactly what you're after, PC World is fine; again, I've shopped there myself. If you need to ask a tricky question, though, think again. PC World is called PC World for a reason. You get good advice at the mail-order companies advertising at the back of Macworld. I bought my most recent home Mac via mail-order. But back in 1990, I fancied looking and playing with a new purchase before shelling out over a thousand pounds. Nowadays I have the benefit of seeing this stuff up close at shows, or disassembled in the Macworld Lab. Most people do not.

Another thing most of us outside of the US don't have access to is the bricks-&-mortar Apple Store. There are 75 of these luxurious emporia dotted across the US. When you visit one you realize the potential of a computer store that really pushes the benefits of its products. Not only can you get hands-on with every Mac model and play with iMovie, GarageBand or iDVD, you're invited to theatre-based presentations including 15-minute overviews of the latest Apple hardware and digital-lifestyle applications, as well as free one-hour consumer and pro workshops. Many stores have a School Night each week where students and teachers share what they've created using Apple technology. Some of the larger stores offer two-hour training sessions in areas such as digital photography and movie-making. From the Pietra Serna stone-tiled floors to the etched-glass dividers, no expense is spared. In the Tokyo store, the entire *third-floor* is taken up by an 84-seat theatre with luxury-seating and upholstered walls for sound control. Basildon this is not.

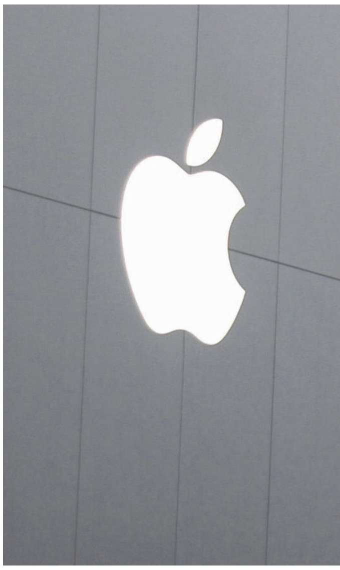
The selection of Mac software is second to none for a high-street store. And there's a decent selection of third-party peripherals available. Some stores include an Internet café where visitors check email and iChat. A kids' section teaches parents the benefits of the Mac as an educational or entertaining tool, or at least keeps the children quiet while mum and dad learn how to set-up an AirPort wireless network. The best thing about the Apple retail store is the Genius Bar – where Apple know-it-alls crucially have time to impart free advice for as long as you're stood there. No matter how knowledgable, independent resellers can't afford to offer such a level of free training and support.

All the indications are that Apple will open a UK store before the end of the year. Independent resellers are understandably nervous of Apple muscling in on a territory that they've invested time and money to establish in the face of low margins and erratic supply. Some sales will undoubtedly be lost to the gleaming Apple Store, its white-teethed staff and Geniuses. But Mac pros and consumers who rely on deeper support than a quick chat with a guy in a black T-shirt and GAP cargo pants will still do business with their local reseller, and be attracted by mail-order deals.

The palace of Apple on London's Regent Street will significantly boost the brand and therefore increase the number of Mac users, not merely cannibalize today's independents. In the same way that the Nike Town stores draw-in the punters who then buy their trainers cheaper on the high street, the Apple Store's chief aim is to get Macs in more people's faces. That said, Apple should pump a little of its $4.5 billion cash reserves into its reseller partners to make the Mac-buying experience as welcoming as possible whether you're in central London, Leeds or Livingston.

For first-time buyers and potential switchers, the flagship Apple Store marks a truly inviting and rich experience that should start to undo the years of under-representation that the Mac has suffered over the past 20 years. You can even take your mum along without fear of embarrassment or getting lost on a dusty ring-road. **MW**

> **'The palace of Apple on London's Regent Street will significantly boost the brand and therefore increase the number of Mac users, not merely cannibalize today's independent resellers.'**



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Plus piles of Web-searching tips...

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STAR WARS JEDI KNIGHT: ACADEMY
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The best version ever – now with 3D features
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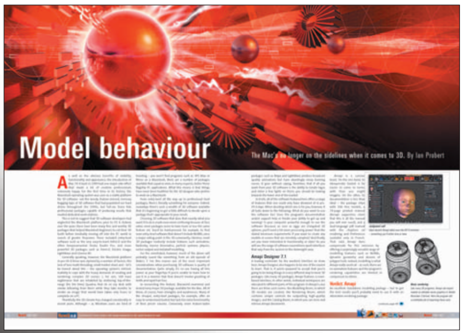

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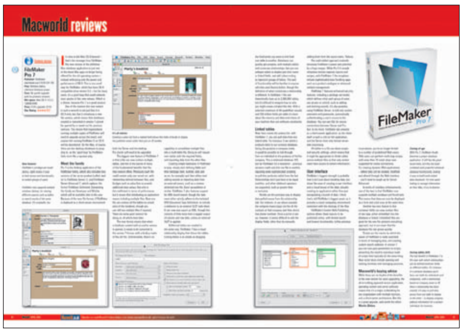

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Macworld is a publication of IDG Communications, the world's leading IT media, research and exposition company. With more than 300 publications in 85 countries, read by more than 100 million people each month, IDG is the world's leading publisher of computer magazines and newspapers.
ISSN 1356-9503
IDG Communications, 99 Gray's Inn Road, London WC1X 8TY.
Tel: 020 7831 9252. Sales fax: 020 7405 0262

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Printed by St Ives (Roche). Covers printed by Hubbards (Sheffield).
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Paul Hooper speaks to Channel 4's highly respected, independently minded news presenter – and secret Mac user – Jon Snow.

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How to survive Unicode. New font technologies are taking over, but what do they mean to the likes of us? Alistair Dabbs sorts out the UTF from the ASCII and offers some practical advice.

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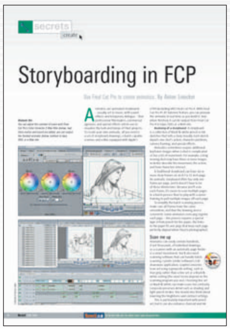
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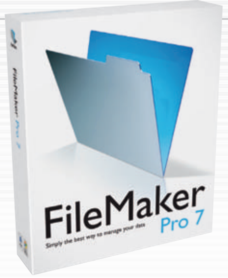

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Your letters win top software each month

Tell us what you think, and you could win a great prize. This month, we reward readers' letters with a copy of Wolverine's Revenge – courtesy of Softline distribution. Email letters@macworld.co.uk. Please provide full name and contact details or write to: Letters, Macworld, 99 Gray's Inn Road, London WC1X 8TY.

(Letters received without a name and address will not receive a prize.)

Wolverine's Revenge
ASPYR
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ACTIVISION

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EXCLUSIVE
iLife '04
Tune into Apple's GarageBand:
Tons of top tips from David Pogue
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⌘ Pantherless Safari

Not content with making Mac users purchase new versions of Mac OS X without an upgrade path, Apple is now forcing us to move to the latest version. Safari has just been updated to version 1.2, and I was totally dismayed to see that its system requirement is OS X 10.3. What about us Jaguar users? Is OS X 10.3 so radically different that Apple can't make Safari backwards compatible.

Apple did the same when it launched iCal and iSync, which were locked into Jaguar. OS 9 to OS X was radical – the rest is just fixes and issues that Apple should have got right in the first place.

If Microsoft did this kind of thing then we would all be screaming Department of Justice. I know Apple users love their machines, but open your eyes a little. Apple is about shareholders, marketing and sales.

Silpesh Shah

⌘ Bank on it

Seeing the tip "Enable Safari's Debug menu" published on page 179 of the March 2004 issue of Macworld reminded me of my difficulties using Virgin Money's online service.

In January 2003 Virgin Money started ridiculing all Mac users attempting to use its service: "You're using a Mac. Idiot. Oh well, you've dug your own grave... gonna try and load Online services...."

It apologized and replaced the message with: "Unfortunately you can't use Online services at present as Java doesn't act in the same way on Macs as on PCs. As soon as there's a solution we have confidence in we'll let you know. You can still use the service wherever you have PC access to the Internet."

However, it did say it had brought a Mac and hoped to make its service accessible to Mac users. In practice, this has not happened, so one year later you still see the message.

Ironically, the service works fine with a Mac as long as you thwart the Mac-incompatibility code.

The easiest way of doing this is to set Safari to Windows MSIE6 in the Debug menu using the tip in last month's issue.

Richard Baker

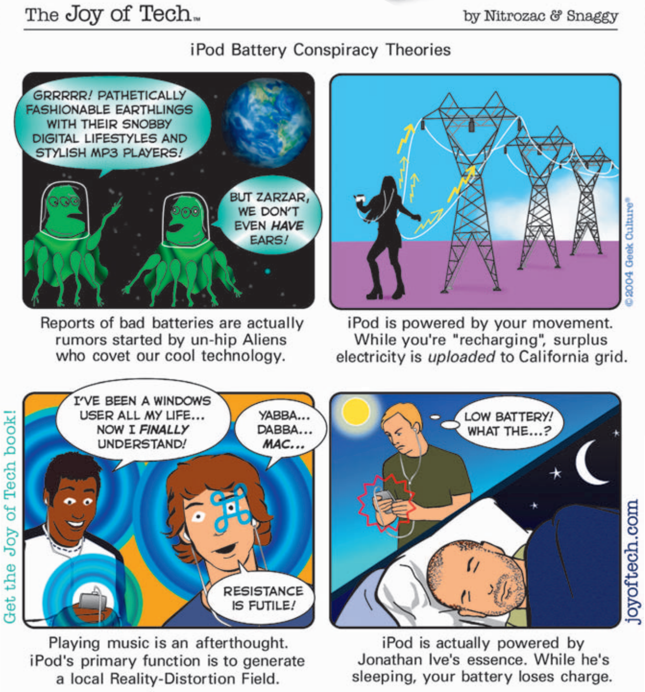
⌘ Licence to thrill

I've had plenty of moans at Quark about over the past few months, and I thought I'd be experiencing another Quark nightmare this week. After buying a single licence of QuarkXPress 6, I was aggrieved that I couldn't use it at home. I'd paid for the software and wanted to use it wherever I was working – not where Quark wanted me to use it.

Then I discovered Quark Mobile Licensing. For £59, Quark grants a second licence for a home computer or laptop for single users. Within five minutes (after reading vast numbers off the screen to the service agent) I had Quark activated at home.

OK, so it wasn't free, but at least I didn't have to fork out the full purchase price again. For the first time in a year I didn't hate corporate Quark with a passion. I even thanked them.

Nick B Davies


The Joy of Tech™
by Nitrozac & Snaggy
iPod Battery Conspiracy Theories
GRRRRR! PATHETICALLY FASHIONABLE EARTHLINGS WITH THEIR SNOBBY DIGITAL LIFESTYLES AND STYLISH MP3 PLAYERS!
BUT ZARZAR, WE DON'T EVEN HAVE EARS!
Reports of bad batteries are actually rumors started by un-hip Aliens who covet our cool technology.
iPod is powered by your movement. While you're "recharging", surplus electricity is uploaded to California grid.
©2004 Geek Culture®
I'VE BEEN A WINDOWS USER ALL MY LIFE... NOW I FINALLY UNDERSTAND!
YABBA... DABBA... MAC...
RESISTANCE IS FUTILE!
Playing music is an afterthought. iPod's primary function is to generate a local Reality-Distortion Field.
LOW BATTERY! WHAT THE...?
iPod is actually powered by Jonathan Ive's essence. While he's sleeping, your battery loses charge.
Get the Joy of Tech book!
joyoftech.com

⌘ Tech support pays

Two more major Apple dealers have gone to the wall. Here at MRC UK Ltd (Mac Recovery Club), we wonder how many more Apple-devoted businesses will go this year? But more to the point, why?

MacWarehouse's parent company, MicroWarehouse, filed for Chapter 11 in the USA and put the Europe business up for sale. Actions such as this demonstrate that even the biggest are not safe.

Profits made by dealers are little more than 5 per cent gross margin on all hardware and software. Doesn't this mean that Mac dealers have to make their money on maintenance and support; just like their PC counterparts?

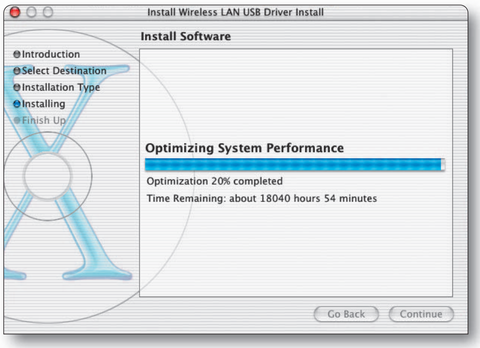
Try buying a computer from PC World without a support contract. PC users don't buy a PC without the accompanying support. So why do Mac users? Is it a legacy of the golden days when buyers *expected* free support?

Isn't it the case that Mac users want to see more people using Macs? How can this be achieved if the number of people selling Macs are diminishing because they can't afford to stay in business?

It's our experience that many Mac users demand free support and will go to inordinate lengths to get it. At this rate such actions will kill off all the Apple Mac resellers and there won't be any left.

We ask you and your technical readers to think about this the next time they start explaining how to get over a problem. Think about the livelihoods of the Apple Certified Service Engineers trying to earn a crust. More to the point, think about the little company down the road trying to scratch a living selling Mac products.

Martin Pittaway



Install Wireless LAN USB Driver Install

Install Software

Optimizing System Performance

Optimization 20% completed

Time Remaining: about 18040 hours 54 minutes

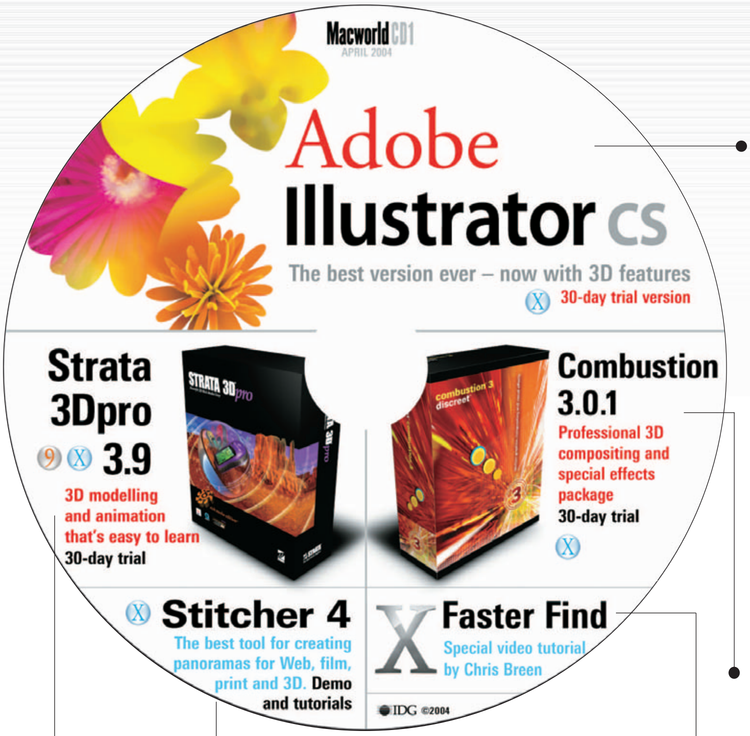
Introduction
Select Destination
Installation Type
Installing
Finish Up
Go Back
Continue

Readers' drives
Reader Chris Walker was a little startled when this dialog box appeared on his screen – that's some heavy optimization going on. If you spy anything quirky like this, take a screenshot and send it in.

Cover CD1

Take three heavyweights – Adobe Illustrator CS, Discreet combustion 3 and Strata 3DPro 3.9 – for 30-day trials, check out Stitcher 4's new features via its tutorials, and find out how to speed-up searches. Over to Vic Lennard...

MAIN ITEMS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Strata 3Dpro 3.9
3D modelling and animation that's easy to learn
30-day trial
Combustion 3.0.1
Professional 3D compositing and special effects package
30-day trial
Stitcher 4
The best tool for creating panoramas for Web, film, print and 3D. Demo and tutorials
Faster Find
Special video tutorial by Chris Breen
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Adobe Illustrator CS 30-day trial

The all-new Adobe Illustrator CS is an essential tool for anyone who needs to express ideas visually in print, on the Web, and in any other medium. Powerful new features include: advanced typographical controls; enhanced Adobe PDF creation; support for Adobe PDF layers; 3D effects; expanded print capabilities; tighter Microsoft Office integration; and faster performance.

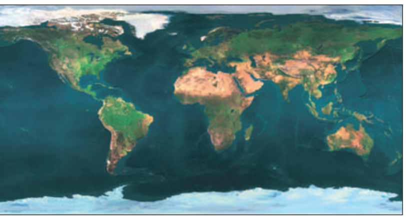
Requires Mac OS X 10.2 or higher.

BEDLAM
Ballroom
SQUIRREL NUT ZIPPERS

Combustion 3.0.1 30-day trial

Discreet Combustion 3 offers creative tools, speed and interactivity. Paint, animation, editing and 3D compositing are combined in an integrated environment based on Discreet's legendary user interface. New features include: RE:Flex, the free-form warper and morphing solution from RE:Vision Effects; JavaScript-based Expressions; and customized brush creation.

Requires an 800MHz G4 running Mac OS X 10.2 or higher.



Strata 3DPro 3.9 30-day trial

Strata 3DPro offers a range of modelling capabilities including splines, polygons, lathing, skinning, metaballs, extruding, booleans, sweeping and more. It can also import models from other 3D packages and illustration applications.

Real-world textures are the key to sophisticated imagery. Strata 3DPro packs the power you need to layer textures and adjust controls such as ambient, bump, caustics, diffuse, glow, opacity, reflectivity, specular and more.

Try the package for 30 days. Requires Mac OS 9.2 or higher. Runs natively under Mac OS X.

advanced_before_up.rzs
09.jpg
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11.jpg
12.jpg
13.jpg
14.jpg
15.jpg
16.jpg

Stitcher 4 demo

Stitcher 4.0 creates high-quality, professional-level panoramas in just a few clicks. It works smoothly and easily with Adobe Photoshop and lets you print and export panoramas in any format and resolution. New features include edit stencils for cropping borders, removing vignetting and artefacts. Save-disabled demo requires Mac OS X 10.1 or higher.

bungalow.mov
selection
Local Disks
Home
Selection
Everywhere
00:01:02

Faster Find movie

This month, Chris Breen looks at better ways to explore files and look for information on the Web. The nine-minute movie examines the ins and outs of OS X's Search facility, including the setting up of custom searches and indexes, and integration with Microsoft Word and Excel. It also looks at add-on utilities such as EasyFind, LaunchBar, iSeek, Watson and Devonagent.

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Cover CD2

Learn the powers of the Force with the playable demo of Star Wars: Jedi Academy, put a flash concept-car through its paces with Adrenalin Racing, and enjoy all the usual demos and utilities on our second CD...

MAIN ITEMS

MacworldCD2
APRIL 2004
STAR WARS
JEDI KNIGHT:
JEDI ACADEMY™
Learn the ways of the Force with Luke Skywalker. Play TWO missions
Adrenalin Racing X
Addictive crazy car action on 10 wacky tracks.
Play it now!
35 full versions
Classic apps and utilities
78 new icons
Shareware world
106 items – over 250MB of try-before-you-buy applications and utilities
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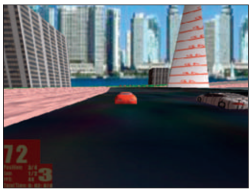
Star Wars: Jedi Academy demo

As a new student of Luke Skywalker's Jedi Academy, follow an ancient tradition and learn the powers – and dangers – of the Force.

Star Wars Jedi Knight: Jedi Academy allows you to immerse yourself in the classic Star Wars universe. Interact with famous classic Star Wars locations and characters while facing the ultimate choice: fight for good and freedom in the light side or follow the path of power and evil to the dark side.

Play two single-player levels with this demo. Requires Mac OS X 10.2.6 or higher, a 500MHz G3 or better, and an ATI Radeon 7500/NVidia GeForce 2 video card or better.

May the Force be with you...

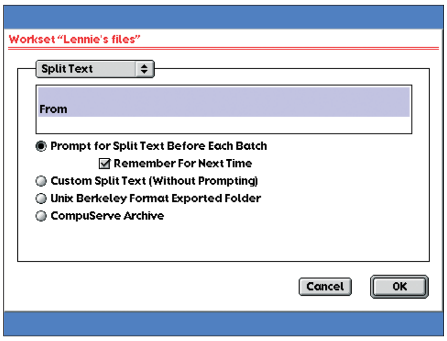


Adrenalin Racing

Drive 20 concept cars, each with unique handling and performance, over 10 tracks in four game modes. There's the classic tournament style where points are awarded per race, Adrenalin with its knockout rounds, Arcade for single races, and Ghost where you race against previously recorded times.

Adrenalin Racing has a custom-made physics engine and is very playable. The demo limits the cars and tracks.

Requires Mac OS X 10.3, although it appears to play fine on Mac OS X 10.2.



Workset "Lennie's files"

Split Text

From

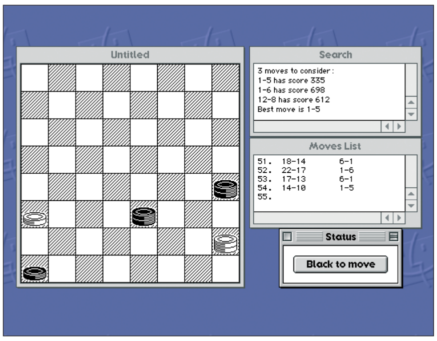
● Prompt for Split Text Before Each Batch

☑ Remember For Next Time

○ Custom Split Text (Without Prompting)

○ Unix Berkeley Format Exported Folder

○ CompuServe Archive


Untitled

Search

```
3 moves to consider :
1-5 has score 335
1-6 has score 698
12-8 has score 612
Best move is 1-5
```

Moves List

```
51.   18-14        6-1
52.   22-17        1-6
53.   17-13        6-1
54.   14-10        1-5
55.
```

Status

Black to move

35 Dejal Systems Classic applications & utilities

Dejal Systems has made all of its legacy Classic products freely available, aside from QuickEncrypt. That's over 30 useful utilities. Most of these products work with Mac OS 9.2.2 but do not work in Mac OS X, other than in the Classic compatibility environment.

Ignore the payment notice in the application, click the Personalize... button, and enter the name and registration code provided.

Utilities include SndConverter Pro 2.4.1, an application that converts batches of sounds from one format to another, down-samples sounds, converts 16-bit samples to 8-bit, changes sampling rates, compresses and decompresses sounds, and filters sound names.

The Text Utilities package includes TextConverter, TextSplitter and TextMerge, three still-useful apps – and you can even get a good game of draughts with the freeware MacCheckers!

page 14

Cover CD2

APRIL 2004

The CD-ROMs on the cover of *Macworld* are supplied as is, subject to the following terms and conditions. The CD-ROMs are provided as a free item to readers of *Macworld* for their personal use, and may not be resold or copied for distribution. The publisher shall have no liability without limitation for any losses or damage arising from using cover-CD software – or for taking advice from *Macworld's* CD trouble-shooting point-of-contact – including any loss of profit, damage to equipment or data, interruption of business, or any other damage, direct or accidental. It is strongly recommended that you back-up any programs or data on your hard disk before installing cover-CD software. If problems occur, it is most likely to be a result of an incompatibility or conflict with other software on your system. *Macworld* cannot be held responsible for discontinued offers. This does not affect your statutory rights.

INSTALL ▶

Before you start working your way through the software on our CD, go to the System Utilities folder and make sure you install the following:

■ Adobe Reader 6 (OS X only)

Install this to be able to read many of the on-screen manuals. Acrobat Reader 5.1 is also available.

■ StuffIt Standard

Installers for StuffIt Standard 7.03 (Mac OS 9) and StuffIt Standard 8.02 (Mac OS X) are included.

■ QuickTime 6

Some programs require QuickTime 6. This can be downloaded from www.apple.com/quicktime/download.

INSIDE MACWORLD (CD1) & SERIOUS SOFTWARE ▼

DiscBlaze 3

An easy way to burn CDs and DVDs. Handles Toast or ISO images and can create PC-compatible CDs and DMG images. Erases CD-RW discs too. Demo.

FontDoctor 6.0

Pro tool for font-problem diagnosis, repair and organization. Locates and eliminates hard-to-find font problems. Prints font sample sheets. Demo.

Free Apple Loops

Over 40MB of audio loops from Bitshift Audio for Apple's new GarageBand. The AIFF files will also work with most audio software programs.

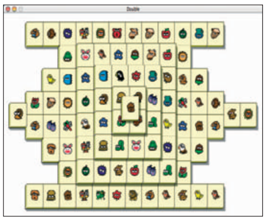
PDF2Office 1.0

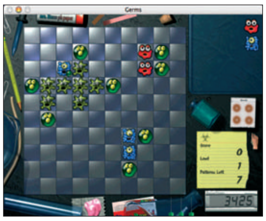
Converts PDF documents into fully editable files for Microsoft Word, RTF, AppleWorks, HTML and so on, recreating the original document layout. Trial.

Demos/trials include...

24U SimpleHelp Plug-In
BKMS, CADtools 3
DPI4, DripDrop
ExportToQT, GPSNavX
HomeGuardian X
Instant PDF Setup
iView, JoDrop
MaxBulkMailer X
Ovolab_Phlink 1.3
SecuritySpy 1.0
SketchUp 3.1.31
SnapzPro X 2
Speed Download 2.3
Troi File Plug in 2.7

GAMES WORLD ▼

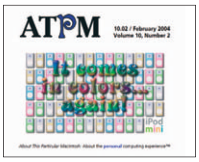




This month's Top 10 Shareware Games includes the latest versions of many of your favourites plus some new games, including the tile-matching Double (far left) and microbe-crunching Germs (left).

MAC OS X/9 SHAREWARE & UPDATERS ▼

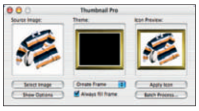
Over 100 useful programs, all subdivided into categories, including:
Agenda 3.0.0
Alarm Clock Pro 6.3.8



ATPM
10.02 / February 2004
Volume 10, Number 2
It comes in colors... again!
iPod mini
About This Particular Macintosh: About the personal computing experience™

ATPM 10.02
Audio Toolbox OSX 1.5.0
CDFinder 4.2.2
ClipboardMenu 1.1.2
CoMa X 6.7
CosmicPainter 1.1
Dnotes 1.1.1
FileChute
Finance 5.0.4
httpmail panther 1.32
iCalViewer 1.0.8
iClean 6.0.1 OSX
Intaglio 1.8.1
iUnit OSX 2.7.0
JellyfiSSH311

My Calendar 10.9.84
NewNOTEPAD Pro 2.0.9
OE vCard converter 1.01
PianistEnvy X 1.6.5
PicPops 3.6
PodManager
RBrowser 3.3.3
ScreenShot Pro 2.6.1
SharePoints 3.4.2
Sharity 2.9 Home
SoundSpectrum Darkroom
SpamRoboCop 1.2.2
SpamSieve 2.1.2
TelnetLauncher 2.7.2
Temp Conversion



ThumbnailPro 1.1
VirtualScreens
VolSpace 1.0.7
Wallet
Zap 2.6.7

UPDATERS

This month's dedicated updaters folder includes over 50MB of patches to bring many popular applications bang up-to-date, including:
BBEdit 7.1.2
EIMS OS X 3.2.3
gPort OSX 1.2.6
LaCie Update Tool 1.1.1
NAV Feb 2004
Virex Feb 2004

CD CATALOGUE ▼

Courtesy of Mark Pirri's superb DiskTracker program, Macworld brings you a searchable catalogue of all our CDs from 1997 to 2004 – almost 440,000 files! This will grow month by month to allow you to find any file you want, without wearing out your CD-ROM drive. The latest version of DiskTracker (2.3) is also included – don't forget to register if you find our library useful.

FAULTY COVER CD-ROM? ▼

- If your cover disc is broken, please contact Jaime Parker on 020 7831 9252, or email jaimep@macworld.co.uk for a replacement.
- If your cover CD doesn't seem to work as it should, please check you have read all the instructions on the cover disc pages carefully first. If it still doesn't work, then please email cd@macworld.co.uk
- Drag installer files from the CD to your desktop before clicking on them.

DON'T MISS… ▼

■ Cool Extras

- Six iPod mini icons from Proença
- A replacement set of 32 icons with a 'natural' feel from Carlitus
- Forty new smilie icons from VladZ

■ Mac ISP

Access offer from Moose Internet Services.

■ Netscape/Internet Explorer/Opera

Netscape X 7.1, IE X 5.2.3, IE 5.1.7 & OE 5.0.6, and Opera 6.0.3

■ Plus…

… many thanks to Simon Youngjohns (youngjohns@hotmail.com) for our CD icons.

SHAREWARE

Association of Shareware Professionals™

Shareware is a distribution method, not a type of software. It makes fitting your needs easier, as you can try before you buy. Shareware has the ultimate money-back guarantee – if you don't use the product, you don't pay for it. If you try a Shareware program and continue using it, you are expected to register. Support shareware authors so that they continue to provide high-quality programs for the Mac.

Apple: New York, Tokyo… and London

Apple will open a giant flagship retail outlet on central London's Regent Street later this year – only the third store outside of the US.

The first signs that Apple's retail plans went beyond the US came with the opening of its outlet in Tokyo's trendy Ginza shopping district.

The company last month revealed that this store had become its most successful operation to date, pulling in $1 million a week. Apple now plans to open a second store in Japan, in Osaka.

Currently Apple has 75 US stores, with flagship outlets in New York, Chicago, Los Angeles, and San Francisco.

The Times newspaper reports that the London location will be a "giant flagship store", adding that the lease will cost the company £1.5 million a year.

Apple is leasing the property from the Queen's property management company, Crown Estates.

Apple, though, has not confirmed its plans, citing its long-held stance of refusing to comment on "rumour or speculation". But a Crown Estate spokesperson told Macworld: "Apple apparently is not prepared to discuss it. All I can say at the moment is the dreaded 'no comment', which isn't very helpful, I know."

Times reporter Jenny Davey wrote: "The outlet, which will span 20,000 square feet, is expected to sell Apple's entire product line."

Davey is described by former colleagues at Property Week as "on the ball and very efficient," adding further weight to the report.

Analysis of existing information regarding the redevelopment of 229-247 Regent Street shows that Apple is likely to be leasing a third of the total 58,000 square feet of retail space available. The redevelopment – which is being conducted for the Crown by property development firm Stanhope PLC – also includes office and residential opportunities.

Stanhope's plans for the redevelopment, which under UK planning law are currently available to the public from Westminster Council, show that the property retains its original Regency construction. Separating walls between the three original buildings have been retained, though tenants leasing the full three sections can have doors installed in these.

'The giant flagship store will span 20,000 square feet, and is expected to sell Apple's entire product line.'
The Times

Apple has established a firm code for the look-and-feel of its retail stores. During the planning phase for the whole retail concept, Apple is known to have secretly built a sample store in a warehouse near Cupertino.

Apple's retail outlets offer a slick, hi-tech shopping experience. There are banks of iPods and Internet-connected Macs to try before you buy, and aisles of the latest essential Mac software, and peripherals, including printers, scanners and digital cameras.

Regent Street shoppers will find a dedicated Kids Area and a Genius Bar, where customers can get free expert advice. Flagship stores also offer learning opportunities in their seminar theatres, and there are also regular presentations.

As the proposed London site is a Grade 2 listed building, Apple's own designers will most likely have to negotiate with Westminster for any major layout or structural changes to the new shop. The location boasts goods-access doors, lifts, stairwells, office and storage space, and is situated at the corner where Regent Street meets Hanover Street.

Apple Store London will benefit from its proximity to both Oxford Street and Oxford Circus Tube station. Big-brand neighbours will include Liberty, Nike and FCUK. It's one of London's busiest shopping districts. Regent Street attracts over 50 million visitors each year, both from within the UK and overseas. Its Christmas lights draw thousands to attend the annual turning-on ceremony.

Apple is buying a little history. Regent Street was the first ever purpose-built shopping street in the

Macworld conference 2004

Macworld UK Conference

Macworld UK has announced its first-ever Macworld Conference, to be held in London later this year. Similar events have been running in the US for 20 years.

The two-day event takes place from May 17-18 at the Barbican, and offers Mac users a host of Mac-industry leaders across a breadth of subjects. Speakers already include noted Mac author Deke McClelland, US Macworld editor Jason Snell, and Macworld UK columnist Andy Ihnatko. There will also be speakers from Apple, and more will be announced closer to the event.

Subject areas include graphics, image capture, editing and layout; Mac OS X and Xserve; video and special effects; and Web design and delivery.

A PDF conference brochure is available for download from www.macworld.co.uk/conference

set to open in world-famous Regent Street

UNDERGROUND
OXFORD CIRCUS STATION

world. Construction of the street took place during the Napoleonic wars (1799-1815), and window-shopping as a social activity in the UK became popular in the 1830s. Regent Street was built by some of the finest British architects of the day, including Richard Norman Shaw, Sir Reginald Blomfield, Sir John James Burnet, Arthur Joseph Davies, and Henry Tanner.

The customer experience is critical to Apple's stores. To maintain this the company favours specific contractors in each outlet. Both its flagship stores in New York and Tokyo were designed with help from Dewhurst Macfarlane and California-based architects Bohlin Cywinski. Firms Flack and Kurze and ISP Design were also involved in both projects.

Both the New York and Tokyo stores extend over several floors. It is not yet known if Apple plans the same at Apple Store London, but the plans show it is possible.

Apple's US critics have accused the company of favouring its own stores above reseller partners when supplying stock. Litigation is wending its way through the US legal system against Apple by MacTech, Macadam, Elite Computers.

With Apple prepared to march into the UK, some resellers are worried. Darren King of the Square Group – situated at the other end of Oxford Street – said: "A reseller should not have to compete with the manufacturer. We already have to compete with the Apple Store, and the Apple Business Store, now we will be competing with them in every sector of the market."

King is resigned to the fact that London resellers are likely to "experience a drop in sales at Christmas", when the Apple Store opens, but said "people are loyal in this market place".

Computer Warehouse's Jonathan Cole doesn't expect Apple to make a profit should it open the store, adding: "I don't think that is its intention."

Outside London some Apple resellers welcome the move. KRCS's Keren Gilfoyle-McGroarty believes: "If Apple gets a retail foothold in a prime retail location it can only be good for the brand as a whole, which is also good for Apple resellers."

Mark Hotter of MacWarehouse said: "The flagship store will increase Apple's brand presence in the UK, and will provide customers with an opportunity to experience the quality of Apple's products first hand."

Some remain pragmatic. Jeanne Razzell of Systems Support said: "We wish Apple would put just 1 per cent of the money it will spend on this project into a joint venture with resellers. But we had been expecting it for ages, and we don't anticipate it being a problem."

Macworld readers welcome the news. One said: "This retail investment may kick-start an improvement across the UK generally," said one.

Another praised Apple's plans because "a lease in Regent Street at least demonstrates that the company is committing to the UK".

Apple has changed the way it does business with its UK retail partners in recent years, encouraging them to prosper through consultancy, specialization and support, rather than unit sales. However, the UK market has seen some resellers unable to make this transition – most recently, Holdens.

This follows a slump in the tech sector and continued allegations from UK resellers of difficulty getting enough Apple product to meet demand. **MW**

Jonny Evans, Karen Haslam

HP deal 'killer' for Napster

Reports claim that Apple's deal with HP may prove to be a serious blow for rival digital-music distribution service Napster, as both prepare to launch services beyond the US. The HP deal means HP will start shipping HP-branded iPods in the summer, and will also install Apple's iTunes Music Store software on the home screen across its notebook and desktop consumer ranges.

It emerges that Napster paid HP $250,000 to secure a deal that ensured its software and service be promoted by the world's largest computer company. In the days before HP announced its deal with Apple, Napster saw its money returned, after which HP announced its plan to carry an own-branded version of Apple's iPod.

Mercury News reports: "Napster is losing money, and top executives have left the company, including its president, chief financial officer, vice president of programming and head of corporate communications, as well as a key board member."

The report also states that Napster has begun laying people off, while music-industry insiders told the Mercury News that it sells just "a quarter" of the downloads Apple does.

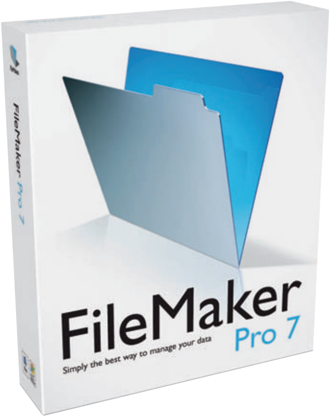
"It's a very competitive market with very ugly economics and there's just no money in the download business,'' Steven Frankel, managing director of Adams, Harkness and Hill told the paper.

Parks Associates research analyst John Barrett said: "The digital-music market is quickly growing and everyone is jumping into the space. Margins are razor thin, however, and substantial volumes are needed to make a profit." **MW**

WWDC 2004

Apple's 2004 Worldwide Developers Conference (WWDC) will be held in San Francisco from June 28-July 2. Last year at WWDC Apple introduced the Power Mac G5, OS X 10.3 Panther, iChat AV, Xcode, its iSight camera and Safari 1.0. (http://developer.apple.com/wwdc)

FileMaker covers data bases



Following months of expectation FileMaker has released FileMaker 7, a massively revised version of its relational databasing product. Code-named Dragonland during development the product has been completely rebuilt, now offering state-of-the-art support for Mac OS X and Windows XP. Older operating systems are no longer supported. The company describes it as "the most significant upgrade ever". FileMaker Pro 7, FileMaker Server, Developer and Mobile will ship soon.

As new breeds of Internet-borne intelligent malware – short for malicious software – emerges, such as the MyDoom worm, the company has built strong security into FileMaker 7. Access levels are set through more-intuitive password-management controls that are accessed and implemented using a Define Accounts and Privileges dialog box. Levels of access can be assigned to individual users, and these access controls extend to Web, network, mobile and ODBC/JDBC access. It's possible to set up security so that access privileges can be defined and linked to a Mac OS X User account, so that no further password authorization is required for a seamless user experience.

The modern move to new working patterns is also reflected. Enterprises can set up databases to allows user access via Windows Terminal Services, WANs and PDAs. Even XML-based data transfers are supported, and it allows users to publish data with customizable levels of security online.

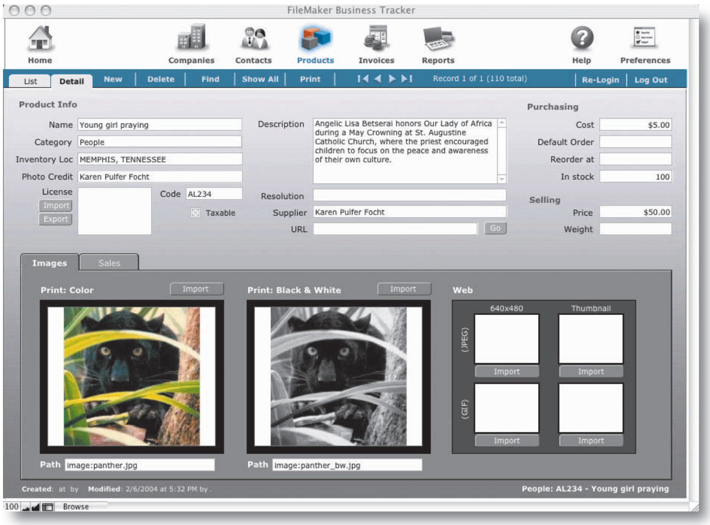
FileMaker Inc. is attempting to make the product more intuitive, with visual tools to handle relationships, database templates and an improved layout wizard. "FileMaker Pro 7 needs no database development or software programming experience", the company says.

The software is equipped with a new "relationships graph" graphical-data model. This offers users and developers an easy way to check and create dataset relationships. Because multiple tables are contained in a single file, users can build bi-directional relationships capable of cascading data from table to table. FileMaker claims even new users can easily create tables, fields and relationships.

Another significant benefit is that a single FileMaker Pro 7 file can contain multiple tables holding different sets of data. People setting-up a database can develop it in a single file, meaning a solution that once needs 30 files now requires just one, containing multiple tables. It means users and administrators can back-up and compress databases more easily.

FileMaker 7's ability to display multiple views means users can look at a list of contacts in one window while editing them in another, making cross-referencing easier.

Up to eight terabytes of data can be stored in a single file, while the number of tables a file can contain is "unlimited", and the top text capacity has climbed from 64K to 2GB, meaning FileMaker



Record 1 of 1 (110 total)

Product Info
Name: Young girl praying
Category: People
Inventory Loc: MEMPHIS, TENNESSEE
Photo Credit: Karen Pulfer Focht
License:
Code: AL234
☒ Taxable
Description: Angelic Lisa Betserai honors Our Lady of Africa during a May Crowning at St. Augustine Catholic Church, where the priest encouraged children to focus on the peace and awareness of their own culture.
Resolution:
Supplier: Karen Pulfer Focht
URL:

Purchasing
Cost: $5.00
Default Order:
Reorder at:
In stock: 100

Selling
Price: $50.00
Weight:

Print: Color
Path: image:panther.jpg
Print: Black & White
Path: image:panther_bw.jpg
Web

Created: at by Modified: 2/6/2004 at 5:32 PM by .
People: AL234 - Young girl praying
100

Tera fried

FileMaker 7 can handle up to eight terabytes of data in a single file – making it a viable solution for creating searchable databases of video, music and other multimedia files.

XPress 6.1 Panther-savvy

Quark has released QuarkXPress 6.1, an extensive update to its DTP application. The company had intended releasing the update in December, but the release has been delayed.

The update delivers performance enhancements including support for Mac OS X 10.3. It's available free to registered customers. New features include better integration with Excel, allowing users to import text, pictures and charts directly into XPress from Excel. The application can import spreadsheets while "respecting hyperlink data".

A Mac-only feature is the Edit Original XTensions module, offering the ability to select a picture, then open and edit it in a preferred image-editing application.

A new font-mapping feature means XPress users can create and manage rules to govern automatic font-substitution. Substitution rules can be shared between multiple users and workgroups, and applied to XPress projects and templates as well as legacy documents.

A new framework that lets users add spell-checking and hyphenation support for supplemental languages is included in the Passport version of the update. QuarkXPress 6.1 requires Mac OS X 10.2 or later. It's available free to registered users, and is also available on CD (call 00800 1787 8275).

In related news, Quark CEO Fred Ebrahimi has resigned his post in favour of company president Kamar Aulakh. MW

New deadline for Design comp

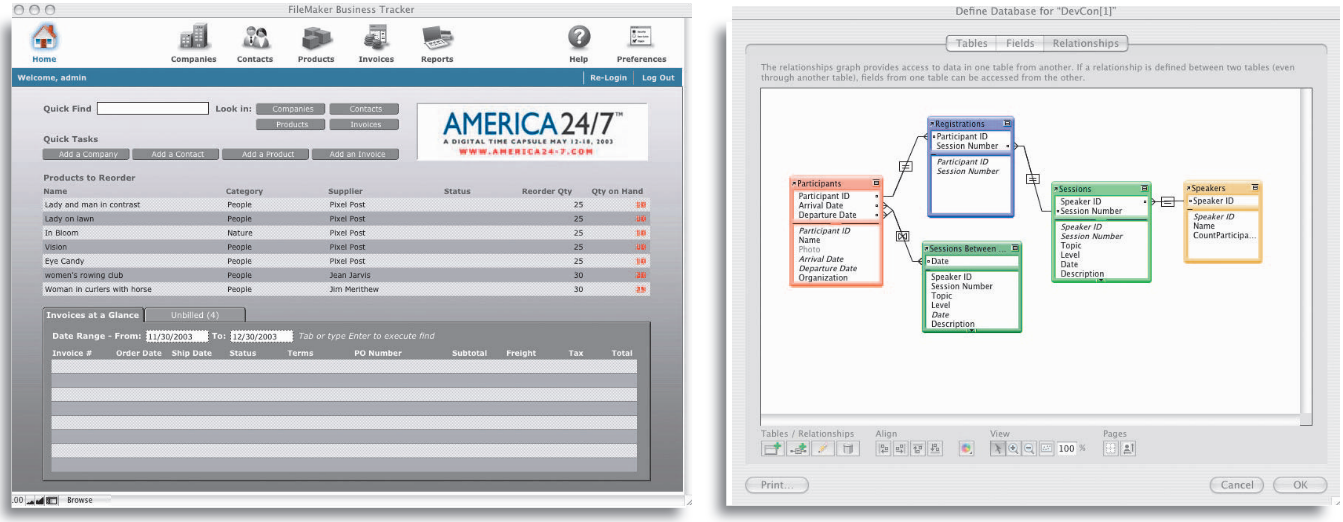
The deadline for Macworld's HP Cancer Research UK design competition has been extended to March 31.

Designers are being asked to develop and design distinctive and exciting branding and promotional materials for Cancer Research's 'Cycle for Life' event in 2005.

The winning designer receives: a Power Mac G5 and 17-inch Apple monitor; HP ScanJet 4670; HP Photosmart 945 camera with docking station; Adobe Creative Suite Standard edition; HP Designjet 120.

The winning entry will also be used extensively in the nationwide Cancer Research campaign.

Visit www.macworld.co.uk/win **and register to receive a competition brief.**


FileMaker Business Tracker
Home
Companies
Contacts
Products
Invoices
Reports
Help
Preferences
Welcome, admin
Re-Login
Log Out
Look in:
Companies
Contacts
Products
Invoices
Add a Company
Add a Contact
Add a Product
Add an Invoice
AMERICA 24/7™
A DIGITAL TIME CAPSULE MAY 12-18, 2003
WWW.AMERICA24-7.COM
Invoices at a Glance
Unbilled (4)
Browse
Define Database for "DevCon[1]"
Tables
Fields
Relationships
Participants
Participant ID
Arrival Date
Departure Date
Participant ID
Name
Photo
Arrival Date
Departure Date
Organization
Registrations
Participant ID
Session Number
Participant ID
Session Number
Sessions Between ...
Date
Speaker ID
Session Number
Topic
Level
Date
Description
Sessions
Speaker ID
Session Number
Speaker ID
Session Number
Topic
Level
Date
Description
Speakers
Speaker ID
Speaker ID
Name
CountParticipa...
Tables / Relationships
Align
View
Pages
100 %
Print...
Cancel
OK

Quick Find

Quick Tasks

Products to Reorder

Name	Category	Supplier	Status	Reorder Qty	Qty on Hand
Lady and man in contrast	People	Pixel Post		25	10
Lady on lawn	People	Pixel Post		25	10
In Bloom	Nature	Pixel Post		25	10
Vision	People	Pixel Post		25	10
Eye Candy	People	Pixel Post		25	10
women's rowing club	People	Jean Jarvis		30	20
Woman in curlers with horse	People	Jim Merithew		30	15

Date Range - From: 11/30/2003 To: 12/30/2003 *Tab or type Enter to execute find*

Invoice #	Order Date	Ship Date	Status	Terms	PO Number	Subtotal	Freight	Tax	Total

The relationships graph provides access to data in one table from another. If a relationship is defined between two tables (even through another table), fields from one table can be accessed from the other.

Safety first

FileMaker 7 can protect data, yet easily assign privileges to users, including linking user IDs to Mac OS X's user file. A new relationships graph (above, right) offers a graphical, easy-to-manage means of seeing how data is inter-related.

more easily embraces pictures, graphics, PDFs, MP3s, QuickTime, and other multimedia files.

In FileMaker 7 the user hits Return or Select Another Record to automatically save data, with Confirm and Revert options included to provide a safety net.

Instant Web Publishing has been improved, offering better security and access controls. It supports the sharing of ten files with five users concurrently.

Scripting has been updated to support new FileMaker Pro features such as multiple windows and improved security. Most notably, options in ScriptMaker are now editable, and are saved per script-step, not per script, meaning existing scripts can be tweaked or extended much faster than before.

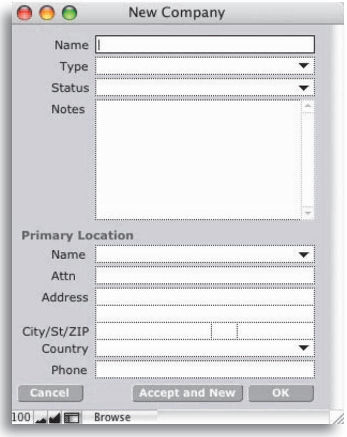
The product enables users to access data from multiple platforms – Windows XP, Mac OS X, Palm OS, Pocket PC, and the Web – and serves FileMaker files to both Windows and Mac clients concurrently from Server or Pro running on either platform. FileMaker Server supports up to 350 simultaneous clients.

FileMaker Server 7's Instant Web Publishing (IWP) model has been redesigned to offer more functionality and security. It supports Custom Web publishing and XML data publishing, with support for up to 350 simultaneous users. There's 70 pre-built scripts for a multiuser server environment. There is support for external authentication of users and groups via Apple OpenDirectory and Windows Domain accounts and Secure Sockets Layer (SSL) encryption of client/server connections.

Administrators benefit from Server 7's Live Updates facility, so there's no need to take databases offline to change database definitions, passwords and preferences. FileMaker Developer 7 promises to speed up the development process. It carries all the new features of FileMaker Pro 7, and adds a selection of developer-friendly features, including: integrated Developer Utilities, for creating, customizing, protecting, and deploying runtime database solutions; a Database Design Report feature for publishing comprehensive documentation on how a database is built; a Script Debugger; File Maintenance tools for improving performance, and a Custom Functions utility, meaning developers can use pre-defined calculations within a project. Bundled with 7 is a file-conversion tool for users of earlier versions.

FileMaker Pro 7 ships on March 10, and costs £219, while an upgrade (from version 6 only) costs £119. Prices exclude VAT. Other products in FileMaker's range will ship "in early summer", the company said. **MW**

Jonny Evans


New Company
Name
Type
Status
Notes
Primary Location
Name
Attn
Address
City/St/ZIP
Country
Phone
Cancel
Accept and New
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Panther power

Both the user interface and the application are completely Mac OS X Panther-powered.

Streamlined Portfolio 7 due

Extensis has announced version 7 of Portfolio, its digital-asset management solution. The upgrade includes new features to streamline the importing, organizing, and distributing of digital photos. These include CD burning, batch image-conversion, and the ability to embed IPTC metadata – such as captions and copyright information – directly into image files.

Portfolio 7 can read EXIF and IPTC metadata from image files, and embed this data directly back into image files, ensuring that critical information remains permanently attached to image assets, even when exported to other applications, according to Extensis. Also available is NetPublish – a module that turns Portfolio catalogues into Web sites.

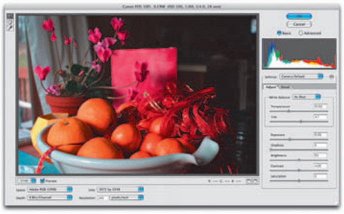
Portfolio 7 for Mac will be available for download in May. The Windows version will be available in April. It is expected to cost £169.95 (excluding VAT) with a NetPublish license that allows sites to be shared with a single connected computer.

Camera Raw updated to 2.1

Adobe has released Camera Raw 2.1. The bundled Photoshop CS plug-in now offers support for a further 14 digital cameras from Sony, Pentax, Panasonic, Olympus, Nikon, Leica, Leaf, Kodak and Fujifilm. A 1.4MB Mac OS X-compatible version of the plug-in is available for free download.

Camera Raw allows users to fine-tune Raw-format images. Raw files are 'digital negatives', stripped of all camera-based settings, such as white balance and sharpening. The update boasts better support for metadata file types, better green-pixel balancing, "crosshatch" noise reduction and other key features.

■ In other news, Adobe is set to launch an iTunes Music Store-style service for downloading stock photography and design templates, Adobe CEO Bruce Chizen told ComputerWire.



Faster, smaller, cooler

The 970FX is the new wave in processor technology from IBM. As well as making the processor world sit up and take note, it will be making an ever greater impact on the computing lives of Mac users.

The 970FX is better known as the latest iteration of the G5 chip. At Macworld Expo San Francisco Apple told business contacts that it will use the chip when it ships.

The new chip is faster, smaller and cooler than the old G5. It is expected to consume 24.5 Watts at 2GHz – half that consumed by old G5s at a lower speed. IBM confirmed that a 2.5GHz 970FX will dissipate 50W – down 30 per cent on the previous generation, which ran at lower speeds. At the low-end it takes 12.3W at 1.4GHz.

Such performance has seen the 970FX voted ‘best desktop processor of 2003’ by the processor industry’s leading title, Microprocessor Report – beating Intel’s Pentium 4 and AMD’s Athlon 64 FX-51.

Microprocessor Report editor-in-chief Peter Glaskowsky told Macworld: “IBM currently makes what we believe is the best PC desktop processor on the market – the PowerPC 970FX, and we expect to see this chip appear in laptops as well as as desktop machines.

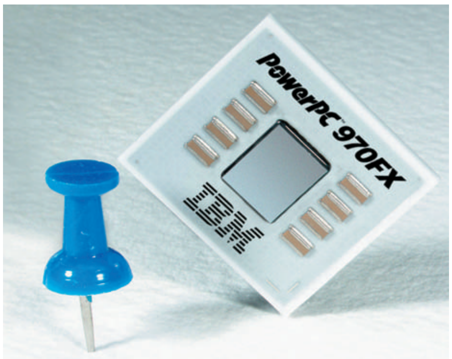
“Apple had a role in the development of the PowerPC 970 family, and has benefited greatly from the ability to use these chips. Those chips are a critical ingredient in the recipe for Apple’s systems.”

There are three critical technologies behind the new G5: strained silicon, silicon-on-insulator and copper wiring – all combined in a cutting-edge 90-nanometer (nm)-process technology.

IBM confirms that the 970FX is the first of its processors to be built using the three conjoined technologies. The previous-generation G5 chip was made using a 130nm process. The 970FX is derived from IBM’s Power4 processor. It can address 18 exabytes of memory, can run both 32-bit and 64-bit apps, and supports symmetric multiprocessing.

Mac users will be able to use both 32- and 64-bit software on the same chip once 64-bit apps appear.

IBM senior technician Norman Rohrer said the chip can be used in desktops, notebooks and networking equipment, thanks to its built-in ability to vary power consumption thousands of times per second. This reduces power consumption and heat dissipation on the fly.



PowerBooks

Richard Doherty, research director at Envisioneering told Reuters: “It’s logical that Apple would select the flexibility of this chip for a next-generation notebook computer.”

IBM, meanwhile, expects to realize even greater gains in efficiency as it ramps production of the new process technology. IBM fellow Bernard Meyerson said: “With this fusion of IBM-pioneered technologies customers no longer have to sacrifice performance to achieve the power savings they increasingly demand.”

Applications developers can also expect performance boosts from the new chip. February’s Micropocessor Report states: “Despite being smaller than Pentium 4, its performance is fully competitive.”

Micropocessor Report has responded to reports disputing these claims by saying: “Testing shows the Pentium 4 and AMD’s Athlon 64 to be significantly faster on real-world applications. This is due to the availability of Intel’s highly efficient vectorizing x86 compiler.

“IBM recently released its own vectorizing compilers for the PowerPC 970. These work with Apple’s own development tools, and we expect them to be widely used for Mac software development.

“As IBM’s compiler technology is adopted by Macintosh software developers, Mac applications will get a significant performance boost,” it said. **MW**

Jonny Evans

Apple UK offers leasing deal

Apple is offering UK business and education customers the chance to lease any Power Mac, PowerBook, Xserve or Xserve RAID, Apple displays, software and third-party peripherals, interest-free for up to 24 months. An administration fee of £100 is charged.

The offer will be available until April 15. Payment is on a monthly basis but Apple will waive the first payment – making the total payments less than the actual value of the product, the company claims. Customers must qualify for finance through Apple Financial Services.

Chip body moves on bus tech

The HyperTransport Consortium has released a new high-speed version 2.0 specification of its technology that now also includes mapping support for alternative bus technology PCI Express.

HyperTransport chip-to-chip interconnect technology is a universal CPU to I/O connection technology that replaces existing multi-level buses in systems such as personal computers. This version offers a 75 per cent performance boost over the previous specification – from 12.8GB per second to 22.4GBps. HyperTransport 1.1 supported 1.6 Giga Transfers/second; this new version supports three speeds - 2.0, 2.4 and 2.8 Giga Transfers/second.

Because it supplies an extremely large interconnect bandwidth, users benefit from faster data throughput. The specification is robust – seeing off stray electrical signals while remaining flexible to implement.

Effectively the technology was developed to fix a problem whereby new generations of high-speed devices had grown to a point that the speed at which they threw information at the processor exceeded that of the system interconnects, creating a bottleneck and offering below-optimum performance.

Apple uses the technology in its Power Mac G5s, where it handles communication between the processors, FireWire bridges, hard-drive controllers, Ethernet and other parts.

The facility to map to PCI Express host-bus adaptors means Intel-supported PCI Express devices will work with the standard. Initial products should appear near the end of 2004.

Jonny Evans

Firms cash-in on cult iPod

Alscher Podboard

Griffin iTalk

Griffin PowerPod

The global popularity of Apple's iPod has spawned a booming sub-market of iPod accessories including holders, cables, speakers, headphones, and software.

Apple iPod worldwide product marketing manager Danika Cleary told Macworld: "We are getting fantastic feedback. iPod accessories sell and sell. Take a single category – cases, for example. Even though there are dozens and dozens of cases there seems unlimited room for new ones. Everybody buys at least one case, and many buy more than one.

"We love the innovation that our developers have bought to the iPod. We think it's something that distinguishes iPod from any of its competitors. You don't have this range of accessories for any other music player out there."

The iPod accessory market is a cash bonanza, says Radtech chief engineer John Grzeskowiak – makers of PodSleevz cases. He said: "The iPod space is a good one to be in. The market has the potential to be so much broader than the classic Mac space. Right now iPod accessories outsell Apple notebook accessories by 10-15 times. A company could easily exist around one decent iPod product, and that's pretty amazing to me."

iPodlounge publisher and editor-in-chief Dennis Lloyd said: "iPod sales have increased, and so has our readership. Readers all want accessories. Most own several cases and a handful of peripherals. iPod has achieved 'cool gadget' status and it will be hard to unseat."

Lloyd also noted that his site – launched in November 2003 – has already become a full-time job. "I've been blessed with success", he said.

President of Matias, maker of the popular iPod Armor case, Edgar Matias said: "The market was slow at first, but lately it's gone nuts – we can barely meet demand."

With HP set to ship its licensed HP iPod in June, the market for add-on products seems set to grow again. Apple's Cleary confirmed that the HP-Pod would support existing add-ons. "It's the same hardware and software," she said.

"We expect HP's broad channel and distribution to do great things for iPod sales worldwide, and the fact that iTunes will be installed on all its consumer PCs will grow iTunes' reach extraordinarily."

Griffin Technology's Andrew Green confirmed Cleary's claims: "Most accessories work perfectly with the HP-Pod. Sales are better than we expected. The iPod is the jukebox for an entirely reinvented music industry."

Podboard manufacturer Urs Alscher said: "The potential seems bigger than ever. With the HP-Pod we expect the iPod add-on market to become more crowded."

Countries outside of the US now await the arrival of Apple iTunes Music Store – the service credited with helping kick-start the digital-music explosion.

Cleary said: "We are certainly pleased with the impact the Store has had on US iPod sales."

Analyst firm IDC said: "Because most competing MP3 players utilize an incompatible file format Apple stands to develop a built-in market for the iPod".

The iPod mini exists to extend this market's breadth, and the mini is good news for iPod-accessory developers, as it will support existing accessories. Cleary said: "The mini has the same connector and the same software."

Apple introduced third-generation iPods in 2003, and they carried a new FireWire connector. This was a planned move. The new port offers extra pins that developers can use to implement new controls and new features within the product.

"It was a strategic move," Cleary explained. "The new connector and dock are exactly what allow this new connectivity and extendibility."

Belkin offered the first tranche of products to harness these new features. Belkin UK channel manager Robin Marjason said: "In September 2003 Apple approached several partners to discuss supplying accessories that would use new features found in third-generation iPods.

Spin the disks
iPods are becoming part of club culture, as DJs seek alternatives to vinyl.

"We became the preferred partner because of our ideas, design and research and development capabilities."

Within two weeks Belkin had come up with four products to "enhance the iPod experience": a media reader, voice recorder, car charger and extended battery pack. Apple and Belkin worked closely together. Marjason said: "iPod 2.1 was developed in parallel with the new products to ensure maximum functionality. We've seen unprecedented demand since launching our products. The dynamics between Apple and Belkin were amazing, and we would have no hesitation joining forces again."

Cleary said: "We are very excited, and interested in expanding the world of the iPod beyond the product itself. We love the innovation and excitement developers have bought.

She said that one area for product development is "connectivity in the home – to stereos, and speakers". Apple offers a Home Stereo Connection Kit, with cables and connectors from Monster. "It's a basic kit", she said. I think there's probably a lot of opportunity for getting iPod music around the home."

Developers are already looking at the iPod mini. Contour Design's Ketan Vora said: "We are looking at ways we can develop a case that doesn't compromise the look of the iPod mini."

iPod mini ‘well priced’ – Apple

Apple’s iPod worldwide product marketing manager Danika Cleary believes the iPod mini is well priced, at least in the US.

Apple took 100,000 iPod mini pre-orders before the product shipped on February 20 – a response the company called “off the charts”.

The 3.6-ounce, 4GB-capacity product is aimed at the high-end of the existing flash memory-based music player market, but offers more capability than existing products in that market. With a higher capacity and award-winning design, the cross-platform iPod mini uses the same connector as third-generation iPods, meaning existing third-party peripherals should work with it. iPod mini also works as an external FireWire drive.

Cleary told Macworld: “The iPod mini is smaller and very fashionable, so it may appeal to women or younger people who may not have considered an iPod previously.”

iPod
Playlists
Browse
Extras
Settings
Backlight
MENU
MENU
MENU
MENU
MENU

In the US the iPod mini is $249 – or $50 cheaper than the 15GB iPod. Apple’s chosen price has been criticized as being too expensive, but Cleary insists the price is right. “We really do think the price is right. Flash-based players cost around $200 but for just $50 more you can get 16 times the amount of music in a package that’s not much bigger than any of the top-selling players in that category.

“In terms of what people are buying, competing products are not really much smaller than the iPod mini, and in some cases are larger. Its size and capacity make iPod mini worthwhile.”

Other agree. Edgar Matias is president of Matias, maker of the iPod Armor case, said: “Despite all the whining about the price from the Mac faithful the iPod mini will be a spectacular success for Apple.

“The Mac faithful don’t understand retail. They argue that if you can get a higher-capacity iPod for just $50 more, why would anyone get an iPod mini?

“But there is one class of customer who almost always buy the cheapest available option – gift givers. The product’s a stroke of genius,” he said.

Apple has said it wants to charge UK customers £199 (including VAT) for iPod mini, but Cleary says this may change: “We will set the international pricing – dependent on currency exchange – closer to when the product ships in April,” she said. **MW**

Jonny Evans

Apple’s need for secrecy can cost product makers such as Contour, Vora explained: “Sometimes there’s not enough time to sell a product, either because there’s no iPods in channel, or Apple changes its design – which is when we don’t recover our investment in product tooling.”

The iPod’s calendar and notes features also open chances for software developers in this emerging ecosystem.

Michael Zapp is owner of Zapptek, maker of iPodIt – which lets users transfer contacts and email from Entourage and Mail, as well as Stickies, Address Book, iCal and RSS news and weather info to their iPod. He said: “I began this as a weekend hack because these were features I needed. I found that others needed these things too, and I’ve been able to develop iPodIt.

“People are only scratching the surface of what can be done.

“A lot of people are realizing they use PDAs only for viewing information, and can live without data entry most of the time. Once they realise this they get really excited about iPodIt, because it’s just what they need.”

PodMail software developer Stephen Mitchell already works with notes and contacts with his IMAP mailbox synching app, but would like to do more: “I’d love to develop, and then play, some of the classic Atari games – Tetris, Space Invaders, Missile Command are all games I think could be written for iPod.”

Mitchell praises Apple’s focus on the iPod as music player, and warns: “By allowing too many peripherals and applications, the simplicity and elegance of the iPod could be lost.”

Cleary said: “iPod is one of the most successful consumer electronic products; you see those white headphones coming up the street, and owners nod to each other. I think that is directly related to the third-party community that has developed these great products. It’s a fabulous device.”

The iPod’s success is opening eyes in European fashion houses. Fashion insider Gerardine Hemingway, wife of TV fashion pundit Wayne Hemingway, told Macworld: “Building iPod bags seems a good idea, and will happen. But I haven’t heard anything yet.”

Looking forward, Apple faces competition. It must continue to innovate to maintain its lead and keep its new ecosystem alive. Is Apple ready for the task?

“Oh, we certainly think so,” said Cleary. “If you look back at the past two years we have innovated at a pretty rapid pace. We have introduced three generations of product and a new product in that time. We see ourselves at the front of the market, not trying to catch up.”

The PC-compatible iPod has also given the PC-market developers a shot in the arm. A spokesman for RedChair – developer of iPod PC software Anapod Explorer – said: “Sales have exceeded expectations. But the iPod is a complex device, so developing stable, reliable, and yet feature-filled software for it is very challenging.” **MW**

Jonny Evans

Belkin media reader

Tech events diary 2004

MacFest
March 12-14
Risskov, Denmark
The biggest Mac event in Denmark.
www.macfest.dk

CeBIT
March 18-24
Hanover, Germany
The World’s number-one event for the ICT sector.
www.cebit.de

Federal Office Systems Expo
March 23-25
Washington, USA
Exhibition for government IT buyers.
www.fose.com

Digital Expo
March 30-April 1
NEC, Birmingham
Digital print and services exhibition.
www.digitalexpo.co.uk

Sign UK
March 30-April 1
NEC. Sign and visual communications exhibition.
www.signuk.co.uk

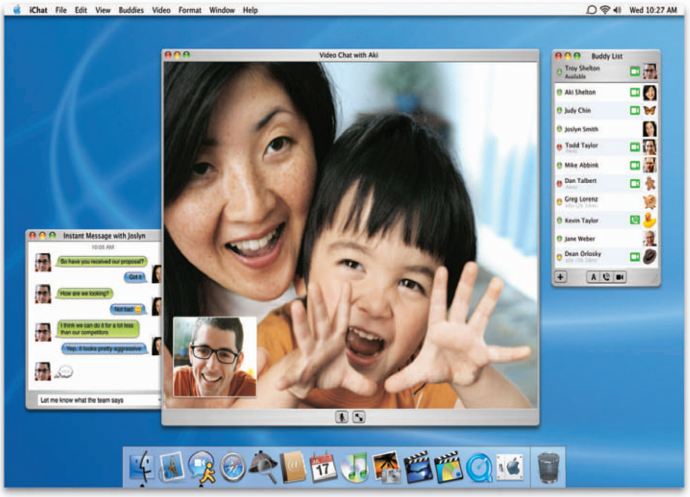
Bio-IT World Expo
March 30-April 1
Boston, USA
Technology for life sciences and healthcare.
www.bioitworldexpo.com

Learning in a Digital World
March 30-April 2
Cheltenham College.
Teacher Institute course from Apple.
www.apple.com/uk

NAB
April 17-22
Las Vegas. Broadcast, video and effects event.
www.nab.org

Seybold
April 18-21
Amsterdam. Media and technology show.
www.seybold365.com

AOL's iChat-up line


iChat File Edit View Buddies Video Format Window Help
Wed 10:27 AM
Video Chat with Aki
Buddy List
Troy Shelton
Available
Aki Shelton
Judy Chin
Joslyn Smith
Todd Taylor
Mike Abbink
Dan Talbert
Greg Lorenz
Kevin Taylor
Jane Weber
Dean Orlosky

Instant Message with Joslyn

10:05 AM

So have you received our proposal?

Got it

How are we looking?

Not bad

I think we can do it for a lot less than our competitors

Yep, it looks pretty aggressive

Let me know what the team says

Apple and AOL US have released platform- and software-independent software to allow Instant-Messaging users to easily video-conference.

Apple has made a public beta version of iChat AV 2.1 available that supports video conferencing with those using AOL Instant Messenger (AIM) 5.5 on Windows XP and Mac OS.

"This means you now have immediate access to the millions of people in both the Mac and PC communities," Apple said.

"With the introduction of iChat AV in Mac OS X Panther and the iSight camera, Apple revolutionized the way people communicate with each other over the Internet," said Philip Schiller, Apple's senior vice president of worldwide product marketing.

"Now iChat AV users can video-conference with AOL buddies around the world who use PCs."

AIM users can conduct live video-messaging link-ups, and manage multiple AIM screen names from the same session, as well as invite buddies to play online games through their instant-messaging connection.

AOL Desktop Messaging senior vice president and general manager Ed Fish said: "With the increased popularity of instant messaging both for fun and for work our focus is innovating, so that AIM users have new advanced features that allow them to create more interactive instant-messaging experiences.

"AIM 5.5 offers additional tools to help stay in touch, and be more productive and more entertained."

AIM has 50 million active users each month, and AOL handles nearly 2 billion instant messages each day.

iChat system requirements for audio include Mac OS X 10.3 or later, a G3 processor, built-in USB, iSight, or a microphone, and a 56K modem connection.

Video-system requirements include OS X v10.3 or later, G3 600MHz; built-in USB, iSight, or any FireWire-based camera, broadband, and iSight, or any microphone.

Once installed, users can revert to an earlier version of iChat AV by choosing Revert to iChat AV 2.0 in the iChat AV application menu.

In related news, Apple has released a firmware update for its iSight video camera. It's available via OS X's Software Update.

Along with better performance, it improves auto exposure and white-balance functions, and enhances Instrumentation & Industrial Digital Camera (IIDC) compliance, Apple said.

Mac users with older USB Web video cameras that may not be supported in Mac OS X can acquire software from EchoFX called USBVision for X.

This allows users to run up to eight supported cameras on one Mac. USBVision costs $25, and is available from www.echofx.com. **MW**

Jonny Evans

Macworld CD
Adobe
Illustrator CS
The best version ever – now with 3D features
30-day trial version
Strata 3Dpro 3.9
3D modelling and animation that's easy to learn
30-day trial
Combustion 3.0.1
Professional 3D compositing and special effects package
30-day trial
Stitcher 4
The best tool for creating panoramas for Web, film, print and 3D. Demo and tutorials
Faster Find
Special video tutorial by Chris Breen
IDG

On the CD

FontDoctor 6.0 for Mac from Morrison Software is a $69.99 package offering font organization as well as problem diagnosis and repair. It scans all font folders it can find on local or networked drives to diagnose and solve problems. It can handle missing PostScript fonts, bitmaps, corrupted and damaged fonts, font-ID conflicts, and more.

FontDoctor also lets users organize fonts by family name, alphabetically or by a range of other options. It can print sample sheets, convert Windows fonts for Macs, and publish font-diagnosis reports.

www.morrisonsoftdesign.com

Iomega meets stiff challenge

After some lean years, Iomega hopes to revive its fortunes with a new storage technology called Removable Rigid Disk (RRD).

RRD is designed to solve common tape-solution problems, such as wear and tear. Iomega claims its RRD-based drives are more durable than tape because the sensitive read/write heads and electronics are sealed in, and benefit from an air-filtrating system, and it has a transfer rate of 22MB/sec.

The first Iomega RRD device is the REV drive. Iomega says the 35GB disk will be the smallest portable storage solution available. The drive is expected to cost £269 – less than most tape alternatives. The removable media costs £40. Both prices include VAT. The company says a 20GB file takes 20 minutes to back-up using REV technology – compared to an hour with DDS tape. It is also said to offer a 35-year lifespan.

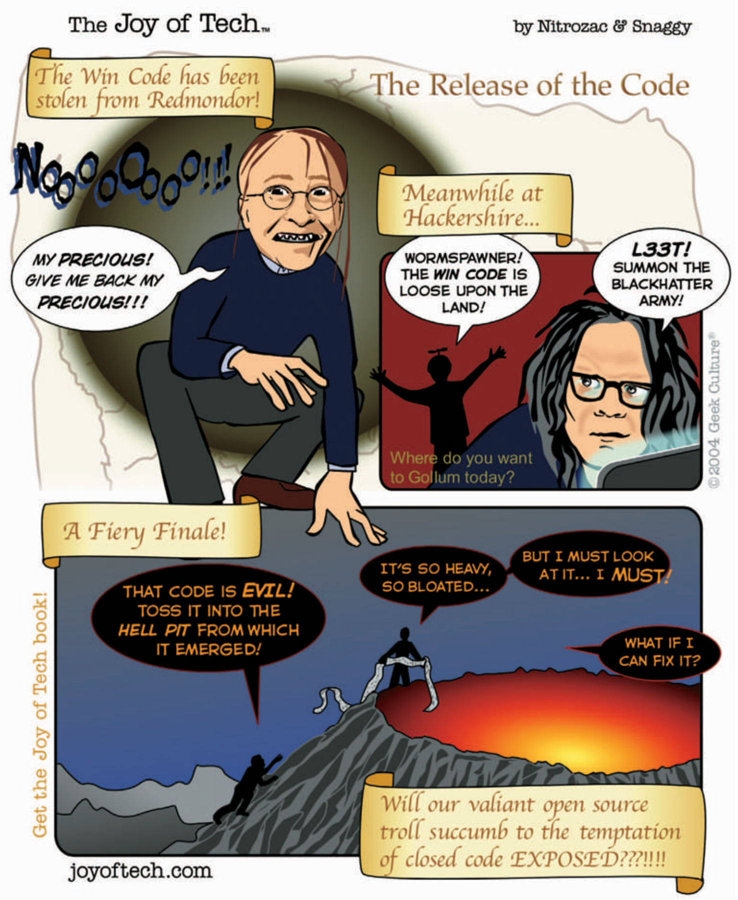
Iomega say a benefit of the system is "virtually unlimited storage expandability". It also claims: "The discs are rated for over one million rewrites versus thousands for tape."

REV
iomega
35GB/90GB

REV drives feature a Boot and Run feature that provides users with "prompt disaster recovery". Iomega claims the drive can act as a "spare hard disk" until a failed hard drive can be replaced. REV is compatible with most backup and disaster recovery software. MW

Karen Haslam

The Gates of more dough


The Joy of Tech™
by Nitrozac & Snaggy
The Win Code has been stolen from Redmondor!
The Release of the Code
Noooooooo!!!
MY PRECIOUS! GIVE ME BACK MY PRECIOUS!!!
Meanwhile at Hackershire...
WORMSPAWNER! THE WIN CODE IS LOOSE UPON THE LAND!
L33T! SUMMON THE BLACKHATTER ARMY!
Where do you want to Gollum today?
©2004 Geek Culture®
A Fiery Finale!
THAT CODE IS EVIL! TOSS IT INTO THE HELL PIT FROM WHICH IT EMERGED!
IT'S SO HEAVY, SO BLOATED...
BUT I MUST LOOK AT IT... I MUST!
WHAT IF I CAN FIX IT?
Will our valiant open source troll succumb to the temptation of closed code EXPOSED???!!!!
Get the Joy of Tech book!
joyoftech.com

Security experts are warning that Microsoft's dominance of the operating systems market has created a software 'monoculture' that threatens global data-security and systems, and undermines consumers' faith in the safety of their personal data. They also say that more-reliable OS vendors such as Apple, could well be affected by the resulting harm to public confidence.

In February Microsoft released a software update that repaired a "critical" security flaw in multiple versions of Windows operating systems, but this appeared eight months after the flaws were found. A Microsoft official said it took so long to produce the patch because "of the need to look at the broadest possible implications of the flaw".

UK-based IT security firm mi2g took Microsoft to task. A spokesman said: "Eight months was clearly too long. The implications of such an attack become increasingly difficult to envision, especially if there is a leak from within the organization that discovered the vulnerability, or if another entity independently identifies the same flaw in the meantime."

Also in February, hitherto top-secret operating system source-code for multiple versions of Windows was leaked to the Internet. Within days of the appearance of this code a security-threatening exploit based on that code was also released.

The identity of the miscreant who released Microsoft's code has not been found, but the FBI is investigating the event, and Microsoft is monitoring downloads of the files. No patch exists to protect against this source code release.

Apple currently issues scheduled security updates to fix problems, but despite the rock-solid stability and high level of security inherent in OS X, Apple runs the risk of being tarred with Microsoft's brush.

mi2g warns: "These issues are lowering the trust of the public in computing vendors, Internet-based financial transactions, and safekeeping of digital assets."

Warnings

The analysts also warn that despite the existence of a software patch from Microsoft many of its domestic and small-business customers may even take months to install it. There have been warnings before. Security analyst Dan Geer co-authored a report released last year on the dangers of Microsoft monoculture. Geer was working for Microsoft customer @Stake at the time he released the report. He left the company soon after.

The FBI is also on the case. US Homeland Security Department chief information officer Steven Cooper has said Microsoft dependency is "a concern" and that "the department would likely expand its use of Linux and Unix as a precaution."

Apple is actively courting Federal markets, and a recent online report claims many at the FBI use Macs. Why? Because they believe Macs to be more secure.

It's possible that Microsoft may be driven to emulate Apple's open-source philosophy. Mac OS X is based on open-source Unix architecture.

A recent Linuxworld magazine article stated: "Microsoft needs to consider a partial open-source model for code development if it hopes to survive the coming open-source onslaught."

In related news, the European Commission in February rejected an offer from Microsoft to settle its long-running antitrust case, in which it is alleged that by carrying Windows Media Player with its OS, Microsoft is putting rivals solutions – such as Apple's QuickTime and RealNetworks – at a disadvantage.

Jonny Evans

See both sides

Mitsubishi has unveiled a liquid crystal display that can be viewed from both sides. The display – a world first, the company claims – was developed for use in clamshell mobile phones.

Two versions of the displays are available. One allows an image to be viewed form both sides of the same panel, the second synchs the two images, so that text reads correctly from either side.

Low-cost CD-burning

DiscBlaze 3 from RadicalBreeze provides low-cost CD/DVD burning for users who need more than basic DiscBurner support, but not the bells and whistles offered by other high-end applications for such tasks. The benefit of DiscBlaze is its cost – $19.

It can burn data and audio CDs and DVDs, and multiple sessions to the same CD. Mac, PC and hybrid discs can be produced. Other features include Save and Load Burn lists; and the ability to burn existing Toast or ISO disc image files. DiscBlaze needs Mac OS X 10.2.6 or higher. www.radicalbreeze.com

Adobe Illustrator CS
Strata 3Dpro 3.9
Combustion 3.0.1
Stitcher 4
Faster Find X

57% The portion of Macworld Online readers who couldn't live without iTunes.

Republic takes Mac by storm

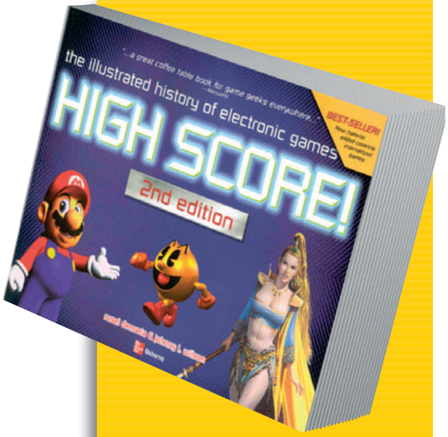
Feral Interactive is applying the finishing touches to its Mac port of award-winning PC strategy title Republic. The PC version of the game won much praise, with PC Gamer writing: "Republic has levels of depth and subtle complexity not seen before in computer games." The soundtrack was also nominated for a Bafta.

The action is set after the collapse of the Soviet Union. The Republic of Novistrana is on the brink of collapsing into faction-led infighting. The player's job? Starting with local help, they must build enough national support to ignite a revolution, toppling the president by means fair or foul.

Other factions strive to stop you, and you'll be forced to resort to extreme methods, including blackmail, brainwashing and staged riots to meet your goals. The game engine lets players focus on entire cities or individual characters. Gamers can also expect real-time light sources and weather effects. Controls are described as "intuitive", and Republic maintains a cunning and sophisticated artificial intelligence.

Currently in beta, Feral hopes to ship the game in April or May. Minimum system requirements are Mac OS X 10.2; 1GHz G4; 512MB RAM; 32MB video card; and 1.35GB hard-drive space. **MW**

Jonny Evans


"...a great coffee table book for game geeks everywhere..."
the illustrated history of electronic games
HIGH SCORE!
2nd edition
BEST-SELLER!
Osborne

Games history

The Illustrated History of Electronic Games from McGraw-Hill offers something for everyone who has played a video game across 30 or more years of the genre. The £14.99 title takes games enthusiasts on a retro tour. Classics such as Pac-Man and Space Invaders, as well as modern favourites such as SimCity and Tomb Raider. The book also offers first-hand accounts from those who built the games we play. ISBN: 0072231726.

Nanosaur II airborne

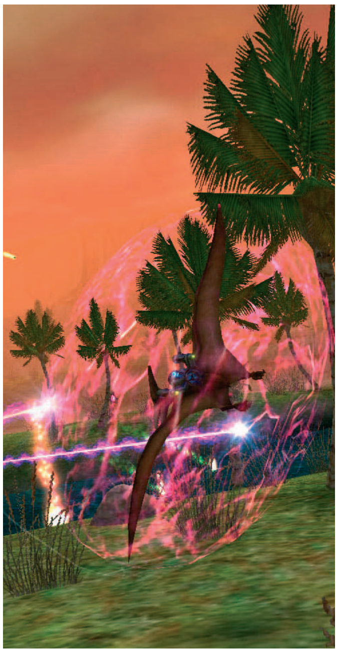
Brian Greenstone's Pangea Software expects to ship Nanosaur II: Hatchling in March. It's the sequel to the popular Nanosaur title that shipped with selected new Macs.

The game is a continuation of the original Nanosaur storyline – except this time players get to fly a pterodactyl loaded with hi-tech weaponry. The game is also much larger than the original title, which was released in 1998. It introduces a selection of two-player levels, including racing, capture-the-flag and death match. Players also get to wander through the game's adventure mode in their quest to save eggs from hostile dinosaurs.

Greenstone said the company has "done something really amazing with a piece of technology in the game, and it is going to blow people away" – but didn't say what.

It could be a feature that was spotted by MacCentral's Peter Cohen at Macworld Expo, whereby the game works in 3D using red-blue 3D glasses.

The minimum system requirements for Nanosaur II are expected to be Mac OS 10.2.8; G4/700MHz; 512MB RAM; Radeon or GeForce 2 graphics acceleration with at least 32MB of VRAM. **MW**



Adobe
Illustrator CS
Strata 3Dpro 3.9
Combustion 3.0.1
Stitcher 4
Faster Find

On the CD

Phelios Software's DripDrop is a collection of three falling-object puzzles. The title requires Mac OS X, 64MB RAM, and 25MB hard drive space. It costs $10.

.Mac bonus

Apple has released further perks for its .Mac subscribers alongside an updated version of Backup (v.2.0.1). Subscribers can also download and enjoy 12 Super Jigsaw Puzzles from GameHouse.

Members can also download a special trial version of Pop & Drop, an arcade game. The full-version upgrade price is $12.95, rather than $19.95.

Anderson steps down

Peter Oppenheimer

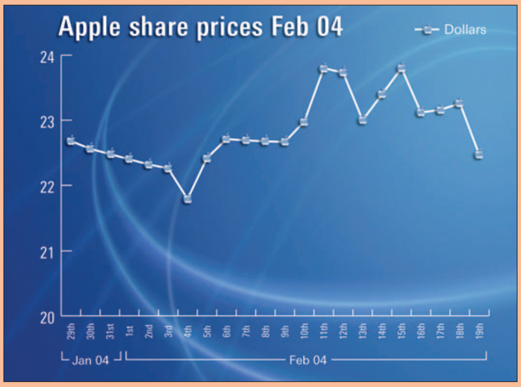
Apple's chief financial officer executive vice president Fred Anderson will retire from his post on June 1. Anderson will be succeeded by Apple senior vice president of finance and corporate controller Peter Oppenheimer (left). Anderson will be appointed to Apple's board on his retirement, Apple said.

A grateful Apple CEO Steve Jobs said: "Fred has been one of my closest partners at Apple, and has earned the reputation as one of the finest CFOs in the technology industry. We're going to have a smooth hand-off to Peter, who will be a great CFO for Apple, and we'll continue to benefit from Fred's contributions as a member of Apple's Board."

Anderson said: "We have been grooming Peter for this role for four years and he is going to be a great CFO. Peter already has responsibility for almost all of Apple's financial departments and has done an excellent job leading them."

Anderson joined Apple as executive vice president and chief financial officer in March 1996. As CFO he oversees the controller, treasury, investor relations, tax, information systems, internal audit, facilities and human resources, and serves on the company's executive team.

Anderson came to Apple from Automatic Data Processing, where he was CFO. He served as a captain in the US Air Force, and is a certified public accountant in the State of California. Anderson currently serves on several boards, including eBay and E.piphany.



At Apple he acquired a great reputation for strong financial management and instilling best practices in financial governance. His major contributions include improving Apple's asset management and enabling long-term profitability.

Oppenheimer joined Apple in July 1996 as controller for the Americas, and in 1997 was promoted to vice president and worldwide sales controller and then to corporate controller. **MW**

UK Mac market up by 25%

Apple continues to gather steam in the UK market, reporting 25 per cent growth in Q4 2003. The results come at a time when reports suggest that the company is this year preparing to open its first UK retail outlet, on London's Regent Street.

IDC released figures detailing fourth-quarter 2003 activity in the UK PC market on February 3.

"Apple had quite a successful quarter in the UK in Q4, with shipments growing 25 per cent year-on-year overall", said IDC research analyst Ian Gibbs. "Ten per cent year-on-year growth was seen in desktop shipments and 50 per cent in notebooks. Apple experienced growth in both the consumer and the commercial markets."

The IDC figures show that the market expanded 16.9 per cent year-on-year in the quarter. Healthy results were driven by strong consumer-sales over Christmas, along with "further growth in commercial IT expenditure and an uplift in public-sector activity", IDC said.

Across vendors, notebooks grew by 28.2 per cent year-on-year while desktops grew 11.6 per cent. Overall growth in the UK market for 2003 was up 13.7 per cent on 2002.

Apple's notebook shipments grew 40 per cent, Gibbs told Macworld, while the iPod "added further credibility to the brand as an "effective consumer product".

Gibbs said: "With consumer-desktop shipments growing 8.9 per cent year-on-year the rise of the multimedia-oriented box as a centre for digital entertainment within the home is an increasingly important phenomenon, and will to some extent hold total desktop replacement in check over the coming quarters."

The company now holds 2.3 per cent of the UK market, while Apple's shipments grew 7.5 per cent in 2003. **MW**

Apple iPod-battery court hell

Apple faces a class-action in California regarding the iPod, the company has revealed. Apple is investigating five claims that allege it misrepresented the iPod battery life, and that it violated a Californian law for unfair competition as well as California's Consumer Legal Remedies Act. Allegations of false advertising, fraudulent concealment and breach of warranty have also been made.

- Apple is also one of eight defendants named in a patent-infringement suit filed by East Texas Technology Partners on January 23. The plaintiff's lawsuit alleges Apple infringed a patent relating to "virtual connection of a remote unit to a server".
- Apple has been named as defendant in a class-action filed on January 9 in California, alleging "improper collection of sales tax in transactions involving mail-in rebates", Dow Jones reports.
- The company also revealed that the case with Apple Corps – the holding company of the Beatles – is ongoing, and that the hearing was to be held in February. Apple's management warns that "legal proceedings can't be predicted with certainty". **MW**

Business briefs

- **Apple CEO Steve Jobs has announced that the company is "debt-free for the first time in over a decade", adding that "it sure feels good". When Steve Jobs returned in 1997 Apple owed $1 billion.**
- **US corporate profits rose 76 per cent in 2003, with Apple seeing a 552 per cent jump in annual profits to $137 million, said BusinessWeek.**
- **In February Steve Jobs met with Apple investor Prince Alwaleed bin Talal, the world's 2nd richest man.**
- **Apple Japan president Eiko Harada is to leave to become chief executive of McDonald's Japan. Senior vice president of worldwide sales Tim Cook will take charge.**
- **Maya-publisher Alias is in discussion with an investment firm regarding buying itself from current parent, Silicon Graphics.**
- **Unova has resolved its patent dispute regarding smart-battery technology with Apple, the tenth notebook maker to reach such a deal.**
- **Adobe anticipates $380-$405 million revenues in its current quarter.**
- **IBM is combining its server and semiconductor units in an attempt to help improve their products. No layoffs are expected.**
- **Both Microsoft and Sony are adopting IBM processors in future versions of their console gaming-devices.**
- **Sony and Toshiba are jointly developing advanced semiconductors measuring 45 nanometers – half the size of Apple's G5.**
- **Motorola has renamed its semiconductor arm Freescale.**

Ink different

Following the trend to offer new variants on the CMYK colour set, Canon is offering two new colour cartridges to expand the colour gamut of its printers. The new inks include a shade of red ink that expands the red-yellow colour gamut, and a shade of green ink to expand the yellow-green end of the spectrum. Canon also claims saturation has been increased by up to 60 per cent to more-closely match the colour characteristics of positive photographic film. Each ink is stored in an individually replaceable tank, and the printer will warn when the ink is low.

Sporting both these new colours is the A3 i9950, offering full borderless A3 photo-prints in 63 seconds thanks to its 6,144-nozzle print head capable of ejecting 122 million droplets of ink a second, Canon claims. The company says this is the "world's longest and highest nozzle-density print head". It will cost £549 when it goes on sale in May.

Canon's i990 (below, right), reviewed on page 54, features the new red ink and a 5,376-nozzle print head that ejects 100 million droplets a second to print an A4 photo in 37 seconds, Canon says. Standard documents print at 16ppm in mono and 12ppm in colour. It costs £299. Both printers feature a USB 2 connection, with the i9950 also sporting FireWire.

Canon's Bubble Jet i80 mobile printer (left) is 52mm thick, and has a profile area less than the A4 sheets it can print. It prints 14 A4 pages a minute in mono, ten in colour, and a 4-x-6-inch photo in less than one minute, says Canon. The printer includes Bluetooth support and an optional battery pack/charger – Canon claims the rechargeable battery will allow printing of up to 450 pages from a single charge.

The company is also introducing a wireless print server – the 802.11b (AirPort) standard WP-20. This £139 print server allows multiple users to share the same printer. According to Canon, it can be installed in "three-easy steps".

08705 143 723

Canon
Power
Wireless
Ethernet

Wireless print serving

The WP-20 (above) has an indoor range of 50m and offers three security features: WEP64/128 bit encryption, the capacity to block access via MAC address, and password protection. It also features a Print-on-Demand function that allows users to manage queued print jobs.

Bubble Jet i80

i990

Xerox shows all-in-ones

Xerox has unveiled two new copier/printers built on a new technology based on a modular architecture that the company claims "creates a digital alternative to complement offset printing and enable new revenue streams for print professionals."

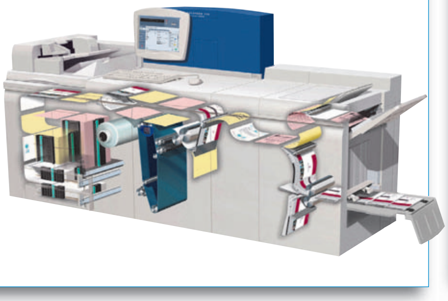
According to Xerox, the DocuTech 100 and DocuTech 120 use 40 per cent fewer moving parts than other digital production printers, enabling faster repair times and greater reliability.

The company claims the printers define a new "mid-production" category – delivering the kind of printing and features previously available only on higher-end equipment. It aims to fill the gap in the market between light- and full-production digital black-&-white copier/printers.

The DocuTech 100 produces 100 pages per minute in copy or print mode, and the DocuTech 120 runs at 120ppm.

Other features of the new DocuTechs are: SmartPress Paper Handling, which uses three independent air systems – a fluffer, an airknife and a vacuum feedhead – to move paper reliably without causing abrasions; and SmartPress Sentry, which monitors and adjusts image quality to improve performance and reliability, according to Xerox. Pricing is to be confirmed.

0870 241 3245



Office printers

Kyocera has launched two new departmental printers. The FS-9120DN (36ppm A4) and the FS-9520DN (51ppm A4) offer 1,200dpi resolution, 25-second warm up times, a maximum input of 4,200 sheets, USB 2.0 and 10/100BaseT Ethernet connections, according to the company. Wireless LAN and TokenRing interface cards are also available. The 9120DN has a 400MHz processor, while the 9520DN has a 500MHz chip.

The FS-9120DN costs £2,065; the FS-9520DN, £2,902.

0118 931 1500

Calendar sharing

Version 6 of the Creative Manager Pro project-management software will support calendar and contact sharing using iCal and Address Book via a new sync and sharing tool. The new tool will also allow calendar and contact information to be shared with iCal and AddressBook on the Mac and Outlook on Windows machines. The update is free to existing users. Pricing starts at £20 per user per month.

www.Creative-Manager.com

Image is everything

Helios has released WebShare, which enables remote viewing of a thumbnail preview of any file in a standard browser window. By viewing first, a user can be sure they have located the correct file before downloading. WebShare also compresses the file as it streams out, so no time or space is lost on the server by pre-compressing files. A five-user base licence is £1,295.

Jigsaw, 01159 422 990

Microspot's new spaces

Microspot is offering Interiors 3.4 – its 3D interior design application – and a basic set of Furniture Libraries for download from an Interiors User Area on its Web site. The Interiors User Area will feature a Library of the Month, with various types of furniture, as well as completed rooms to download. Users can draw rooms with windows and doors, and add furniture, wallpaper, carpets and accessories from the library containing hundreds of items. The downloadable version of Interiors costs £83.

01622 687 771

Low-cost image editing

Bobby Cronkhite Software has announced the release of ZeboPhoto 1.4.1 – its Mac image viewer featuring various image-editing effects. The new version adds support for PNG, JPEG 2000, MacPaint, QuickTime Image, SGI and TGA file formats. ZeboPhoto is shareware – users are asked to pay what they think the software is worth with pricing options starting at £5.

www.bobbysoftware.com

continues page 36

Apple updates

Safari 1.2, a Panther-only update to Apple's Web browser, improves compatibility with Web sites and Web applications; adds support for personal certificate authentication and Java 1.4.2; includes an improved download manager; and displays image dimensions. Apple also released **GarageBand 1.0.1**. The update clarifies specific alerts regarding system performance. **iSync** has been updated to Version 1.4. It offers stability improvements, and support for both the iPod mini and some smart phones. **Final Cut Express 2.0.2** includes changes to the user interface and fixes issues with audio and video syncing over FireWire, timeline-editing functionality, and capturing long clips. Apple released another security update for Mac OS X. **Security Update 2004-01-26** is recommended for all Mac users. Apple also updated its **AirPort Extreme firmware**. Version 5.3 includes support for Wi-Fi Protected Access and offers "performance improvements" between wired and wireless network clients, and improves USB printing performance.

Third-party updates

STAR WARS
JEDI KNIGHT
JEDI ACADEMY
Adrenalin Racing X
35 full versions
78 new icons
Shareware world

Equilibrium has updated **DeBabelizer** – its tool for automating media production. Version 5.0.2 is OS X 10.3 Panther-only, and offers advanced ColourSync tools, extended filename support, and more. **BBEdit 7.1.2** is a maintenance release for Bare Bones Software's HTML and text editor. It fixes issues and adds minor enhancements. Qualcomm's **Eudora Internet Mail Server** has been updated. Version 3.2.3 logs usernames for ACAP (Application Configuration Access Protocol) logins and offers other improvements. **PDF2Office 1.0.1** adds improved table recognition, better graphics, and enhanced paragraph formatting. The software converts PDF documents into editable Word, RTF, AppleWorks, or HTML documents.

Canon's camera salvo

PowerShot Pro1
Canon
8.0 MEGA PIXELS

Canon has announced seven compact digital cameras. The Ixus 11s, 430 and 500 join the Ixus range, and added to the PowerShot collection are the A310, A75, S1 IS and the Pro 1 (right). New technologies include an image stabilizer in the PowerShot S1 IS, which limits blur and keeps video footage steady, according to Canon.

A motor that uses ultrasonic frequency vibrations drives the zoom in the S1 IS and Pro 1 at maximum speed. While in video mode it moves the zoom more slowly, smoothly, and silently so it doesn't interfere with video sound recording, Canon says.

Movies and resolution

The cameras record movie clips that can be cut and edited in-camera. All offer 30 seconds of VGA movie recording, or three-minute movie clips in QVGA and QQVGA modes. The S1 IS and the Pro 1 can record movies at 640-x-480-pixel resolution and at up to 30 frames per second with 16-bit sound. The 3.2-megapixel PowerShot S1 IS offers a 10x optical zoom (38-380mm). It has 13 shooting modes and six photo effects. It will be available in March for £479.

The 8-megapixel Pro 1 has a 2-inch LCD screen capable of displaying 235,000 pixels, and a high-resolution 0.44-inch EVF electronic viewfinder directly above the lens. It's the first digital compact model from Canon to be fitted with Canon's new professional L-series lens, which is equivalent to 28-200mm. The Pro 1 also boasts RAW recording, features 12 shooting modes and two custom modes, and supports sRGB and Adobe RGB colour spaces. It includes a 64MB high-speed CF card and a rechargeable Li-ion battery and charger. It accepts Type I and II CompactFlash cards and Microdrives, and will cost £999. Also available are the 3.2-megapixel PowerShot A310 (below) and A75. The A310 has a digital zoom and will cost £159. The 3x optical zoom A75 will cost £249.

Canon has also announced three new Ixus cameras. The 5-megapixel Ixus 500 is the new flagship. The Ixus 430 features 4 megapixels, and the Ixus IIs 3.2. Both the 500 and the 430 include a 3x optical zoom, the IIs features a 2x optical zoom. The Ixus 500 will cost £399, the 430 costs £329, and the IIs costs £269.
08705 143 723

Canon
PowerShot A310
3.2 MEGA PIXELS

Pro SLR debuts

Canon
EOS-1
D
Mark II

Canon has also announced a new 8.2-megapixel digital SLR camera – the EOS-ID Mark II. Canon claims it shoots and processes over 69mp of data per second.

The company has developed three technologies for this camera. The new DIGIC II image processor processes large files more effectively with improved colour rendering and detail, according to Canon. There's a new, larger buffer system, and a new CMOS sensor that Canon claims provides higher speed, higher resolution, lower noise and less power consumption than CCD technology. Other features include Canon's new E-TTL II flash system for "optimized" flash exposures.

Photographers can take JPEG images at four resolutions, each with ten levels of compression. The camera tags images with EXIF 2.21-compatible metadata so users don't have to manually tweak colour space in Photoshop. It accepts CompactFlash Type I and II cards as well as Microdrives, and sports a second SD card-compatible slot, allowing simultaneous recording to both CF and SD memory cards. The camera supports USB 1.1 and FireWire interfaces, and will go on sale in April for £3,499.
08705 143 723

BenQ is radio-friendly

The newest camera from BenQ, the £199 DC S30, doesn't just take photos. It can also play music (FM radio and MP3), record voice memos, and shoot video. It features 3.34mp, a 3x optical zoom, and has a 180-degree flip-out LCD.

BenQ claims a 256MB memory card can store up to 70 minutes of video.
01442 301 000

FujiFilm's new FinePix releases

FujiFilm has announced two digital SLR cameras. The FinePix S20 Pro will be available in April, and the FinePix S3 Pro is set for launch later this year. Both use Super CCD SR technology to deliver four times the dynamic range of normal photodiodes, FujiFilm says.

The FinePix S20 Pro features 6.2-megapixel resolution and a 6x optical zoom lens (equivalent to 35-210mm). It offers FireWire and USB 2.0, sensitivity settings up to ISO 1600, and manual modes that give full control over aperture, focusing, shutter speed and flash. It also offers VGA movie recording at 30 frames per second with sound, and allows data to be saved uncompressed in RAW mode so it can be manipulated. The camera features a Live Video function for viewing the subject on a monitor or TV, rather than the LCD display. External flash options are available.

When it launches, Canon says the FinePix S3 Pro will deliver 12 megapixels, and feature a two-inch 235,000 pixel LCD monitor. FujiFilm claims the picture quality from the 23x15/5mm sensor will show "noticeable image improvements to that of a single-pixel camera".

Both cameras accept Microdrive and xD-Picture cards and are powered by four AA batteries.

FujiFilm has also unveiled two new point-and-shoot digital cameras – the 3.2mp FinePix A330 Zoom and the 4mp A430 Zoom. Both cameras feature a 3x optical zoom (38-114mm), a set up time of 3.3 seconds, 1.5-inch LCD displays, and 60 seconds of movie recording at 320-x-240 pixels at ten frames a second. FujiFilm claims the A330 Zoom can take an average 250 images per set of two AA batteries (as long as pictures are taken with LCD screen off, and flash is on for only half of the pictures taken).
020 7586 1477

New Kodak EasyShares

Kodak is adding two cameras to its EasyShare line. The 4-megapixel LS743 and the 5-megapixel LS753 are the smallest in Kodak's lineup. The LS743 will cost £269 and will be available in April. Kodak has not yet given a price for the LS753, but it will be in stores in June. New features include a function that tags and saves an image in the internal memory and a Share button for printing and emailing.

Both sport a 1.8-inch LCD, a 2.8x optical zoom lens (equivalent to 36-100mm), and can record MPEG-4 video with sound at 13fps at 640-x-480 pixels or 20fps at 320-x-240-pixels. They also offer image rotation, so pictures taken vertically appear right side up when viewed on the LCD, computer screen or TV. The LS743 features 16MB of internal memory while the LS753 features 32MB. Both support SD or MultiMediaCard media and run on a rechargeable lithium ion battery – a charger is included.
0870 243 0270

Nikon shows its digital wares

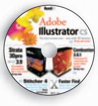
Nikon has announced two new digital cameras: the Coolpix 8700 and D70. The 8700 features an 8-megapixel resolution and an 8x optical zoom, with a 8.9-71.2mm focal range (equivalent to 35-280mm). According to Nikon, the camera can produce images up to 3,264-x-2,448 pixels, or larger than 20-x-30 inches. It features four exposure modes, 12 scene modes, a noise-reduction mode and movie-capture with audio, and will be available in March for £899.

The D70 is an interchangeable-lens digital SLR that features 6.1-megapixel resolution and Dynamic Buffer technology that Nikon says allows 144 pictures to be shot at the rate of three per second. The camera is also able to write compressed NEF (RAW) and JPEG. According to Nikon, the camera is capable of shutter speeds of 30 seconds to 1/8,000th of a second and the auto pop-up flash can sync at shutter speeds of up to 1/500 seconds.

To maximize performance in dark shooting conditions, sensitivity can be set between ISO 200 and 1600, or controlled automatically, and the five-area autofocus system includes an AF-assist illuminator.

The camera is powered by a rechargeable battery that Nikon claims delivers the power to shoot up to 2,000 images on a single charge. The full kit will cost £999.
0845 4500 155

iMovie plug-in suite



BKMS is offering a new set of iMovie plug-ins including Fancy Wipes, Melt In, Pixel Fade, and Pixel Wash. The plug-ins are available for £5 each, or a set of three costs £14. They work with iMovie 2.1.1 to 4.0.
www.bkms.com

Skate and chips

Dr Bott has announced the G5 Skateboard and G5 Roof for the Power Mac G5. The £99 G5 Skateboard attaches to the bottom of the G5, adding slightly to the overall height of the Power Mac and allowing the G5 to be moved around easily. The G5 Roof adds desk space to the top of the G5, it costs £42.
www.drbottkg.com

Mouse in the house

MacMice is offering a £28 three-button mouse. Similar in design to Apple's one-button mouse, it has a clear, seamless, one-piece upper shell with its front half spilt and a scroll button nestled between the two halves.
AM Micro, 01392 426 473

What a hardcase

Axio has launched the Hardpack – a line of hardshell backpacks. According to the company, the bags are rugged and lightweight and will protect laptop computers from "normal wear and tear". There are four designs in the Hardpack series including the Fuse with a customizable, lined interior space, and Tekno, which has a thickly padded and fully lined interior compartment. Both are designed to accommodate and protect laptop computers.
www.axio-usa.com

You rang?

Ovolab has released Phlink version 1.3 – the latest update to its telephony software that turns a Mac into an answering machine and telephone information centre. Users can create multiple voice mailboxes, and have voicemail forwarded to them by email. The new version includes personalized ringtones and costs £81.
www.ovolab.com

continues page 38 ▶

New tools for Maya rookies

Alias has launched the Maya Explorer Bundle, and announced the return of the Maya Productivity Pack. Both are designed for those new to 3D, professional artists, and hobbyists seeking a better understanding of Maya.

The bundle includes six of Alias' best-selling Learning Tools from the Learning Maya 5 series. These include: Learning Maya 5 | Foundation; Rendering; Character Rigging and Animation; Modelling for Animation; Introducing Maya 5 – 3D for Beginners and Maya Techniques | Patch Modelling for Visual Effects. It costs £169.

The Maya Productivity Pack features Maya Complete 5 software, 90-day trial membership to Alias eSupport and the same Learning Tools from the Maya Explorer Bundle mentioned above. The pack costs £1,871.

01494 441 273

LCD goes high-end colour

Barco has announced the Coloris Calibrator. According to the company, it is the first flat-panel display to feature advanced colour-imaging technology.

The 20.1-inch colour LCD has a 1,600-x-1,200-pixel resolution and a viewing angle of 170-degree. Bundled with the display is ColorisTalk, Barco's software tool that allows users to adapt colour temperature, gamma and luminance settings of their display.

The Coloris Calibrator is also equipped with Colour I-Guard – a small sensor, located in the corner of the display that continuously guards and adjusts colour stability and luminance output. This ensures perfect colour matching, claims the company. The monitor also features a 10-bit gamma correction function, and will cost £4,553.

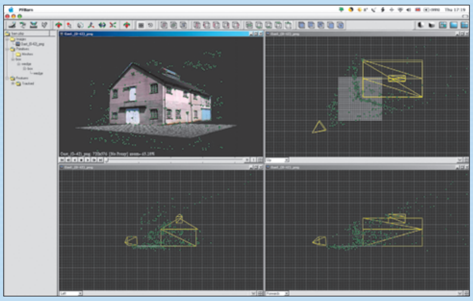
www.barco.com

Upgrade cards unveiled

Sonnet is shipping Encore/ZIF G4 800MHz and 1GHz processor upgrades. According to the company these are the only G4 upgrades to extend blue-&-white and G4 PCI graphics machine performance beyond 500MHz. The new models use Motorola G4 745X processors, with 256K L2 and 1MB of SDR L3 cache.

The company says that when running Photoshop, the 1GHz model increases performance by 317 per cent. The 1GHz unit costs £398, and the 800Mhz version costs £278.

AM Micro, 01392 426 473



Pro 3D architecture

The Pixel Farm has announced PFBarn 1.0 – a 3D image modelling application for architectural visualization that lets users build 3D environments with a simple set of modelling tools.

According to the company, PFBarn allows the placing of geometry, the reconstruction of meshes and the extraction, mapping and rebuilding of textures from a 2D still or moving source. Advanced image-modelling algorithms then calculate camera perspective and movement and match these variables with any placed geometry from a single point of view.

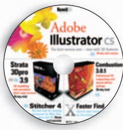
Pixel Farm says PFBarn requires only a single image or sequence to produce geometry – it is not necessary to use multiple views and then match points between images.

It also works with PFMatch, Pixel Farm's utility for matching, moving, or analyzing video footage, which creates a virtual camera that precisely matches the movement of the original sequence.

A licence for PFBarn costs £587. It is available bundled with PFMatch for £1,292. Student or academic licences are also available for £50.

Era, 020 7428 4000

All of the items in this column feature on cover CD 1



FileMaker plug-in update

24U software has updated its FileMaker Pro plug-in. Version 2.0.1 fixes bugs, supports runtime and kiosk-made applications, and improves stability, claims the company. The plug-in provides developers with tools such as help tags that can be built into FileMaker solutions. It is also possible to check the mouse position at the time of last click and automatically locate objects. A licence for one user costs £31; licences for additional users are £5 per user.

www.24uSoftware.com

What's in a name?

Publicspace.net has updated A Better Finder Rename – its contextual menu plug-in for the Finder that lets users quickly rename files. Files can now be renamed based on names in a tab-delimited text file, such as BBEdit. It costs £19.

www.publicspace.net

First past the post

Maxprog has announced a new maintenance release of Maxbulk Mailer – its mail-merge tool for designing and sending bulk emails. MaxBulk Mailer handles plain text, HTML and styled text documents and gives full support for attachments. The standard version costs £21.

www.maxprog.com

By the book

A new accounting/bookkeeping program called TinyBooks has been released. It's a single-entry bookkeeping program written exclusively for the Macintosh and is available for £26.

www.winograd.com

FileMaker referencing

The Troi File Plug-in 2.7 enables information outside a FileMaker Pro database to be accessed. Files can be created anywhere on a hard disk and data from FileMaker fields can be put into them. It's also possible to batch-import pictures or sounds and store a reference to them in FileMaker Pro. The plug-in includes support for up to 255 character file names. It works with FileMaker Pro 5 and later, and licences cost £38 per user.

www.troi.com

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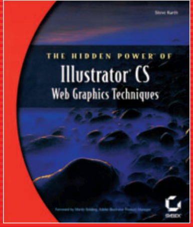
Books



Maya, Illustrator tips

Sybex has published The Hidden Power of Illustrator CS Web Graphics Techniques, Maya 5 Savvy, and Introducing Maya 5: 3D for Beginners.

The Illustrator guide shows how to take art to the Web. Maya 5 Savvy is updated from to cover version 5, and features new tutorials.

Introducing Maya 5: 3D for Beginners offers an initiation into 3D and Maya via exercises and working files provided on the CD.

The Hidden Power of Illustrator CS Web Graphics Techniques costs £29, ISBN 0782141587
Maya 5 Savvy costs £37, ISBN: 0782142303
Introducing Maya 5 costs £22, ISBN: 0782142397

Unix for Panther

The new edition of Learning Unix for Mac OS X Panther is a tour of Unix on the Mac. Also available is Running Mac OS X Panther, offering guidance to the new features in OS X, including improved BSD Unix code. It takes readers inside OS X's core. Both are published by O'Reilly.
Learning Unix for Mac OS X Panther costs £10, ISBN: 0596006179.
Running Mac OS X Panther costs £19, ISBN: 0596005008

Dreamweaver toolkit

Maximum Dreamweaver, "the first complete toolkit" for Dreamweaver power users, according to Wiley, is shipping.

The book and CD package collects more than 80 Macromedia-approved Dreamweaver add-ons, and provides complete instructions on how to use each of them. £19, ISBN: 07964544489

Funky drummer

Drums on Demand has made 900 live, acoustic drum loops available to users of GarageBand. Drums on Demand uses a song-based organization system and each Song Set includes up to 33 verse, chorus, fill, bridge, break, intro, ending and other loops, ranging from one to eight bars in length. Once a master verse or chorus loop that fits the song has been identified, other loops and segments that fit in the Song Set can be selected.

The collection costs $50, but Drums on Demand is giving away five loops for free.
www.drumsondemand.com

Aladdin's music tools

The Big Mix – a collection of nine musical tools – is available from Aladdin for £30. The titles include: Audio Hijack for recording sound played by any application on a computer; Disco, professional DJ mixing software designed for live use; and Doggiebox, a drum machine that enables the creation and manipulation of professional-sounding percussion tracks.

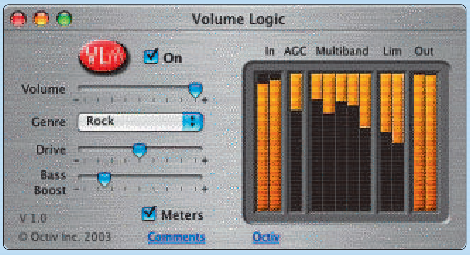
Also included are GrooveMaker, music software for creating non-stop electronic dance tracks in real-time; iPodRip, which lets users move songs from an iPod to a Mac, or to save disk space by playing them through a Mac without copying them over; and iTunes Publisher for sorting, formatting, and exporting iTunes playlists for sharing. Making More Music, a tool for learning about and composing music; MP3 Rage, which catalogues, organizes, and exports MP3s to AIFF format for burning; and Spark LE audio production and editing software, are also included.
Softline, 01883 745 111; www.aladdinsys.com/company/artwork/bigmix.html

iPod-charger updated

Griffin has redesigned the PowerPod iPod Auto Charger. It now features a separate dock-to-FireWire cable enabling it to work with all iPod models – including the iPod mini.

It features a new 48-inch dock-to-FireWire cable, described by the company as "ultra-light and ultra-flexible". The dock-to-FireWire cable can also be used for syncing and docking. It includes a status LED that indicates power and is fused and filtered to protect the iPod in case of electrical surges.

The PowerPod Auto Charger costs £16, and plugs into any 12v cigarette-lighter adaptor.
AM Micro, 01392 426 473



☑ On
Genre: Rock
☑ Meters

Re-mix for iTunes

Volume Logic has introduced an iTunes plug-in for Mac OS X that makes real-time digital remastering possible for all iTunes audio. It costs £12, and automatically adjusts dynamics and spectral balancing in playlists.
www.octiv.com

Free GarageBand loops

Access Music has released a free Apple Loops collection for GarageBand and SoundTrack. The 46MB collection features arpeggiator patterns, fat filter flows and pad sounds generated with a Virus C synthesizer. All loops are royalty-free, and can be used in commercial productions without an additional licence.
www.access-music.de

Bitshift works its groove thing

Bitshift Audio is offering 40MB of free loops for use with GarageBand. The collection includes five new drum kits and four new synth bass sample packs.

The loops can be dragged straight into a real instrument track, and because they use the Apple Loops file format, they will always fit with the song's tempo and key.

They are compatible with any audio software package that supports AIFF files.
www.bitshiftaudio.com

David Fanning

iChat is coming of age – far from being the domain of the spotty teenage geek, it's finding its feet in the business world.

Chat, man – do!

Over the past few months iChat has gradually become a part of my daily work routine. Although it's been around for a while and other chatting apps have been around forever, it hasn't really been something I've got into. It seems, though, that iChat is achieving critical mass. Enough friends and colleagues are using it now, that it's worth turning on as I work.

I've noticed that there seems to be a bit of a learning curve for new iChatters. Not learning how to use the application, that's easy, but learning the new etiquette of polite chat. Historically this online version of texting has been the domain of gossipy teens and bored office workers. While that may still be the case for many, it's also proving to be a useful and legitimate business tool.

The trouble is in getting people to understand that if you're online it isn't necessarily an invitation to discuss soap operas or sports, at least not all the time.

Fortunately iChat offers the ability to set your status – the words underneath your name that let people know what you're up to. You can set status to Available with a green dot or Unavailable, which displays a red dot. In theory this should let your other iChatting friends know what level of attention you'll give chit-chat. In practice, however, many people appear to need these words to reflect a little of their personality. Rather than saying "Eating my lunch" people seem to prefer more cryptic signs.

Looking at my iChat Buddy List at the moment, Jonny's status says "enter sandman", Clive's says "want it" and Ben's is slightly more informative: "Noodling". I have no clue what Jonny and Clive are on about – but Ben tells me that noodling is a down-south (in the US) expression for catching fish with your bare hands, like trout tickling. Obviously he isn't actually noodling at the moment – not in downtown San Francisco – but it does effectively give the impression that he is interruptible for reasons less important than work. Our associate publisher makes no bones about his uses for iChat: his status is permanently "Open to do business".

I like the noodling status. It says "available" without coming right out and saying it. But how do you say "I'm really busy so don't bother me unless you have something *really* important to say" without sounding like a self-important berk. Because chatting is time-consuming, and requires attention, it can be very disruptive at work.

Used properly, though, iChat can help you keep in contact with lots of colleagues regardless of their physical location. I have a number of writers in the UK, US and even Australia. Using iChat I can ask questions, commission work and generally have them on-hand whenever they're online.

I currently have 22 buddies in my list. Presuming my buddies have an average of, say, ten people in their lists, this gives me an amazing communications network. The six degrees of separation – made popular by the theory that Kevin Bacon is no more than six steps away from any Hollywood actor – could come into play here. Kevin Bacon can be linked by the actors he has been in movies with, but it's a fact that anybody in the world can link to anybody else in the world with an average of six steps.

So if I have 22 people in my buddy list, and each of those has 10 other people in their lists, that puts me one step away from 220 people. Taking another step adds another 2,200 people in the group, and three steps adds another 22,000, giving a total of 24,420 – not bad for three steps. Take another three steps and the total number of people is over 7 million – that's twice the population of Singapore.

'I have 22 people in my Buddy list, and each of those has 10 other people in their lists, which puts me one step away from 220 people. By step six, the total number of people is over 7 million – twice the population of Singapore.'

Come and get me

So, science tells us that there is an average of six degrees of separation between anybody on the planet, but the Mac world we inhabit is considerably closer. I think that any person reading this that has iChat and a few friends that use it should be able to pass a message to me via those friends.

The rules are simple. If you know me well enough to have my iChat identity, then you can iChat me directly. If you don't know my iChat identity, then choose a buddy from your list that you think is more likely to have it. Have them pass your message to me. If they don't know my iChat identity, then they should do the same again, chose somebody from their buddy list that is more likely to have my iChat identity. Just so we can keep track of the chain, you should pass on your iChat ID, and the number of steps taken so far. Try something like "Tell David Fanning that <your name and iChat ID here> is Noodling. This is step one".

This will be the most fun if you don't know me at all. I think you'll be surprised at how easy it is to make a link to me. The original study in 1967 by Stanley Milgram of Harvard University did this experiment by post. Using iChat should get results much more quickly. I can't promise to reply to everyone – there could be an awful lot of successful links – but I'll give it my best shot.

I've always felt close to Macworld readers, and this is an opportunity to see just how close you are to me. I'm always interested in what you think regarding the magazine, so you're all welcome to email me with suggestions at my regular email address here at the mag – **davidf@macworld.co.uk**. But for the sake of science and my work schedule, let's keep the iChats brief! **MW**

Michael Prochak

Apple is at the top of the industrial-design heap – but it's taken the best part of 20 years for everyone to realise.

Mac to the future

Although time travel may or may not be achieved one day, it's fairly safe to say that it is certainly not paradoxical. The only problem, according to some theories, is that if you do travel into the past, you'll probably maintain your normal freedom of action – whatever that may be. However, in general you'll still probably end up in the past of a different universe. Clocks and calendars may provide signposts of slippage, but magazine deadlines create even greater anomalies.

From where I'm sitting, at this moment in time, I'm trying to think of a clever link between the first few lines of Sgt Pepper and the fact that the Mac is 20 years old this week. Just put it down to slippage and sing: "It was twenty years ago today, Sgt Pepper taught the band to play... it's been going in and out of style, but it's guaranteed to raise a smile". In those days, Sgt Pepper's band consisted of Steve Jobs and Steve Wozniak and the Mac's arrival was heralded by a seminal Ridley Scott advert that tried to portray just how revolutionary that funny little beige box really was.

For those of us already too old to grow up, it was a weird time when PCs were just starting to instill the notion that 'compatibility' was the word of God – and the beginnings of Uncle Bill's attempt to claim that mantle. Not long before that, PCs were a mixed bag of muddled operating systems and crap software. DOS was working overtime to claim the standards and compatibility high ground. IBM had only recently decided that PCs might actually be a market that had some future, and I was still mucking about on a Commodore 64. There had been reports of something really special called the Lisa, which avoided the dreaded command line and actually worked with recognizable metaphors and icons – using a clever graphical interface and some dumpy pointing device called a mouse. However, it also cost something in the region of £10,000 and was not going to find its way onto too many home or office desktops.

Back then, Uncle Bill couldn't see why anyone would want a graphical interface and his first kludgy attempt at cashing in on the phenomena, Windows 1.0, was still a year away. Basic Mac stuff like overlapping windows and icons on the PC wouldn't appear for another three years, in the form of Windows 2.0. And all these early versions of Windows still ran on top of that crappy DOS command-line operating system that relied on multiple companies, industry groups and interests haggling over every layer of the PC's architecture, from the system bus to the operating system. By comparison, the Mac was a self-contained, cohesive piece of kit produced by a company that controlled nearly every aspect of the operating system and the hardware, ensuring that the two worked together in unheard of and unmatched harmony. In a world of compatibility compromises, Apple most definitely started a revolution, set the standards for ease-of-use, and most certainly created the 'computer for the rest of us'. Unfortunately it's taken nearly 20 years for most of the rest of us out there to recover from the plague of disinformation perpetrated by the IBM and Redmond mob and finally begin to embrace the Mac for what it really is.

OK, Apple, as a company didn't always help. But nowadays, you don't hear the comment, 'great technology, shame about the company' quite so much. Maybe the Mac was too mature for its time, and it's taken 20 years for potential consumers to catch up. Maybe instead of the 1984 Orwellian advert Apple should have done a variation on that beer advert. You know – "schtop... these consumers are not *ready* yet'. Fortunately, despite the various corporate debacles and media reports of Apple's imminent demise over the years, the report of the Mac's death, to paraphrase Mark Twain, has always been greatly exaggerated. And whether the PC geeks like it or not, excellent technology, stylish design and most importantly, seamless and unadulterated ease-of-use, has turned out to be just what the creative digital Internet age really wants. Perhaps they've finally figured out where to get it.

In a world of compatibility compromises Apple most definitely started a revolution, set the standards for ease-of-use, and most certainly created 'the computer for the rest of us'.

The latest version of OS X is now so good that there's no reason to subject yourself to the blue-screen curse, or to open your doors to the latest crop of viruses floating around in cyberspace. The choice may have always been there but these days, could it be any more obvious? Sure, you can buy a PC for under £300. But you can also buy a car with six months MOT and tax for £35. It all still boils down to where you want to go and how you want to get there.

I've read that in the absence of time machines, there tends to be very little interchange of information between universes because the laws of physics predict, in that case, very little causal contact between them. Then again, I don't suppose this takes into account mushrooms, salvia or similar modes of travel that may or may not cross channels of causal contact or require any fundamental change in world-view. But if we did travel back 20 years, knowing what we know today, I wonder whether Bill Gates would still be the richest man in the world – in this, or any other universe? In another 20 years, perhaps the Mac will have absorbed nanotechnology and avoided the whole problem of grey goo. Or maybe Apple will find itself again in corporate-crisis land with more dire predictions of its demise. Who knows? However, I bet I can safely predict that, as the song says, it'll keep going in and out of style... and it'll always be guaranteed to raise a smile. In this or any universe. **MW**

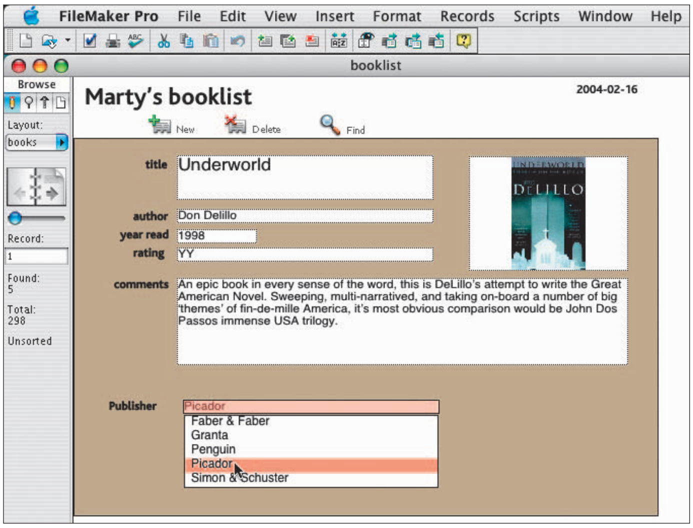
Database colossus

FileMaker Pro 7

Publisher: FileMaker
www.filemaker.co.uk 01628 534 158
Pros: Multiple tables; relational database power.
Cons: No gentle upgrade path for previous versions.
Min specs: Mac OS X 10.2.1; 128MB RAM.
Price: £129; upgrade, £119.
Star Rating: ★★★★/8.8

It's time to bid Mac OS 9 farewell – that's the message from FileMaker. The new version of the definitive Mac database application is just one of the latest Mac apps no longer being offered for the old operating system – instead embracing only the power and performance of OS X. This is one small step for FileMaker, which has been OS X-compatible since version 5.5 – but for many users, it's a giant leap that could certainly slow uptake of this new release. Which is a shame, because Pro 7 is a great product.

One of the reasons this new version is such a wrench is not just that it is OS X-only, but that it introduces a new file version, which means that databases created or converted in version 7 cannot be opened by or saved out for previous versions. This means that organizations running multiple copies of FileMaker will need to upgrade across the board, and anyone left running FileMaker 6 on OS 9 will be abandoned. On the Mac, of course, there are few desktop databases to jump ship to, so the 'giant leap' by FileMaker feels more like a squeeze play.



Marty's booklist

2004-02-16

title: Underworld
author: Don Delillo
year read: 1998
rating: YY
comments: An epic book in every sense of the word, this is DeLillo's attempt to write the Great American Novel. Sweeping, multi-narratived, and taking on-board a number of big 'themes' of fin-de-mille America, it's most obvious comparison would be John Dos Passos immense USA trilogy.
Publisher: Picador

Faber & Faber
Granta
Penguin
Picador
Simon & Schuster

Record: 1
Found: 5
Total: 298
Unsorted

It's all relative
Creating a value list from a related field allows this table of books to display the publisher name rather than just an ID number.

Meet the family

Pro 7 is the desktop application of the FileMaker family, which also includes new versions of the server product (called, wait for it, FileMaker Server 7), and FileMaker Server Advanced 7, which replaces the former FileMaker Unlimited. Completing the family are Developer and Mobile, which will be available later in the year. Because of the new file-format, if FileMaker is deployed as a client-server environment both the Server and the desktop Pro clients will need to be upgraded.

The biggest new feature of FileMaker 7 is that a file can now contain multiple tables, and this is the source of many of the fundamental benefits that the new version offers. Previously each file could contain only one record set, with relationship defined between files, and kludges such as value lists to provide additional data values. Not only is this inefficient in terms of performance, but it means that distributing an application means including multiple files. Now one file can contain all the tables (ie record sets) of the database, though you can still use multiple files if required. There are some good reasons for doing so, of which more later.

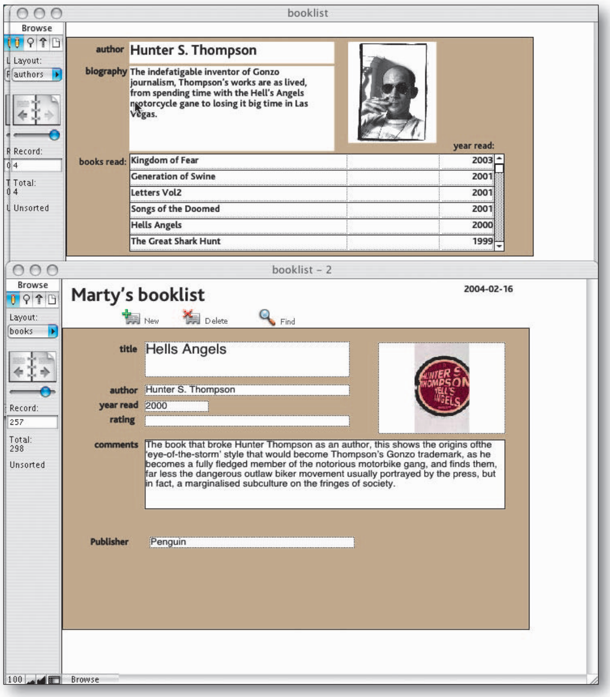
The new format means that when a database created with an earlier version is opened, it needs to be converted to the version 7 format, with a backup made of the old file. Unfortunately, there's no capability to consolidate multiple files into a multi-table file. Doing so will require new tables with the required fields, and importing data from the other files.

Creating simple databases in FileMaker is easy: simply start defining fields and their datatype (text, number, date and so on, for example) and then either start adding records or importing data from an external source, such as a comma-delimited text file, Excel spreadsheet or similar. FileMaker 7 also features support for XML-based import, though the data must either strictly adhere to the included DTD (Document Type Definition), or include a reference to an external XLST style sheet. It can now also export as XML, though this consists of little more than a tagged output of column and row data, unless an external XLST is applied.

Additional tables are created in the same way. FileMaker 7 has a visual relationship display that shows the tables. Linking tables is as simple as dragging

New features
FileMaker's privilege-set model (below, right) makes it easy to limit access and functionality to certain groups of users.

FileMaker now supports multiple windows (below), for viewing different aspects such as tables or search results of the same database. It's scriptable, too.



author: Hunter S. Thompson
biography: The indefatigable inventor of Gonzo journalism, Thompson's works are as lived, from spending time with the Hell's Angels motorcycle gane to losing it big time in Las Vegas.

books read:

	year read:
Kingdom of Fear	2003
Generation of Swine	2001
Letters Vol2	2001
Songs of the Doomed	2001
Hells Angels	2000
The Great Shark Hunt	1999

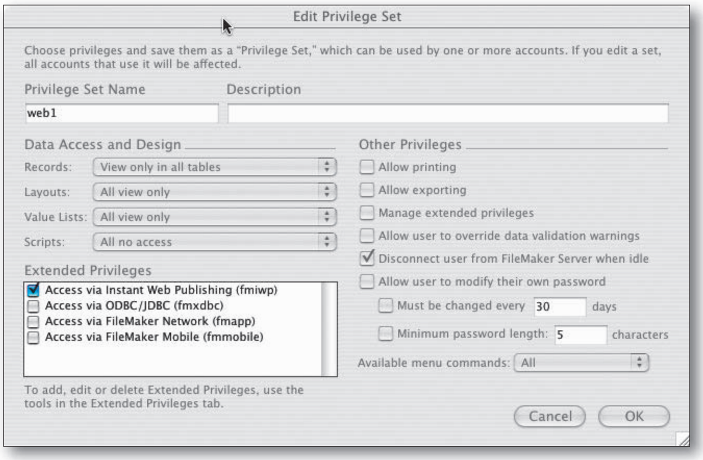
Record: 4
Total: 4
Unsorted

Marty's booklist

2004-02-16

title: Hells Angels
author: Hunter S. Thompson
year read: 2000
rating:
comments: The book that broke Hunter Thompson as an author, this shows the origins ofthe 'eye-of-the-storm' style that would become Thompson's Gonzo trademark, as he becomes a fully fledged member of the notorious motorbike gang, and finds them, far less the dangerous outlaw biker movement usually portrayed by the press, but in fact, a marginalised subculture on the fringes of society.
Publisher: Penguin

Record: 257
Total: 298
Unsorted



Edit Privilege Set

Choose privileges and save them as a "Privilege Set," which can be used by one or more accounts. If you edit a set, all accounts that use it will be affected.

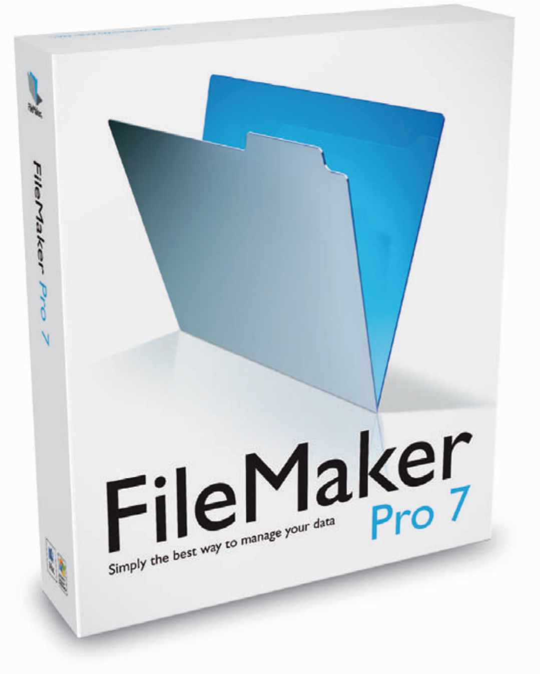
Privilege Set Name: web1
Description:

Data Access and Design
Records: View only in all tables
Layouts: All view only
Value Lists: All view only
Scripts: All no access

Extended Privileges
☑ Access via Instant Web Publishing (fmiwp)
☐ Access via ODBC/JDBC (fmxdbc)
☐ Access via FileMaker Network (fmapp)
☐ Access via FileMaker Mobile (fmmobile)

To add, edit or delete Extended Privileges, use the tools in the Extended Privileges tab.

Other Privileges
☐ Allow printing
☐ Allow exporting
☐ Manage extended privileges
☐ Allow user to override data validation warnings
☑ Disconnect user from FileMaker Server when idle
☐ Allow user to modify their own password
  ☐ Must be changed every 30 days
  ☐ Minimum password length: 5 characters
Available menu commands: All



Coming of age
With Pro 7, FileMaker finally becomes a proper database application. It still has the great layout tools, but this has been combined with powerful relational database functionality, making it easy to build multi-tabled data structures. For new users looking to manage information on their Mac, it's a no-brainer.

the fieldnames you want to link from one table to another. Databases can quickly get complex, with multiple tables and numerous relationships, but you can collapse tables to display just their name or linked fields, and add colour-coding to represent groups of tables. This sort of functionality will be familiar to anyone who has used Access before, though the definition of what constitutes a relationship is different. A FileMaker 7 file can theoretically have up to 2,500,000 tables, but it's difficult to imagine how or why you might create a kraken like this. With a potential maximum of 64 quadrillion records and 256 million fields per table it's more about the memory and data restrictions of your machine than any software constraints

Linked tables

Now, here comes the science bit: with FileMaker 7, you can pull data from any linked table. For instance, if we added a products table to our contacts database, listing the products a company made, it would be possible to link through from an individual to the products of his/her company. This is relational database 101, but for FileMaker it's a revelation – previous versions could only link one file to another, requiring some sophisticated scripting to pull this particular rabbit from the hat. Relationships don't just have to be equal matches, and other relational operators are supported, such as greater than or exclusive.

Portals are the principal way to display data pulled across from the relationship link. For instance, in our above example, the company layout page can list all the contacts at that company and their direct-line phone numbers. Once a portal is set-up, however, it seems difficult to edit the display fields, other than by manually adding them from the layout menu. Tedious.

The multi-tabled approach instantly increases FileMaker's power and potential by a huge margin. While Pro 5.5 sample templates include expense reports and recipes, with FileMaker 7 the templates include sophisticated data-handling apps such as a product catalogue or advanced contact-management.

FileMaker 7 features enhanced security features, including a privilege-set model, which defines what each group of users can access or control, such as adding and deleting records. It's also possible, using FileMaker Server, to link into system username and passwords, automatically authenticating a user's access to the database. You can use SSL for secure connections between Server and Pro. But, to my mind, FileMaker sits uneasily as a client-server application, as the client itself is such a rich (or fat) application, and the Server does only limited server-side processing.

All tables in a file can share scripts and security settings, which means that it might be appropriate to divide tables across multiple files so that only certain users have access to certain information.

User interface

FileMaker's biggest strength is probably that it isn't just about handling data, but about the ease of creating a user interface and a visual layout of the data; actually creating an application rather than just manipulating a bunch of data. I think that's still FileMaker's biggest asset, as it provides a visual computing environment consistent with the ideology of the Mac.

FileMaker's Instant Web Publishing options allows these layouts to be published online, with limited search and browse functionality. Unlike previous incarnations, you're no longer limited to a number of predefined Web views. Web-users can perform multi-step scripts, with more than 70 script steps now supported for online connections. For creating dynamic Web applications – where data can be created, modified and altered through the Web interface – you'll need to cough-up for Server Advanced.

In terms of interface enhancements, one of the best is that FileMaker now supports multiple windows and found sets. This means that data can now be displayed as a form and a list view at the same time.

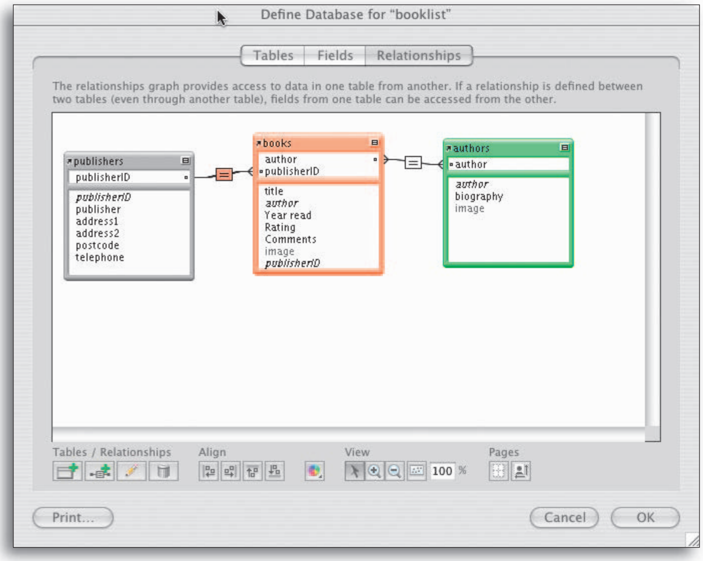
Another key new feature is that container fields can now contain files of any type, either embedded into the database or linked. Embedded files are great for the one-file-contains-everything approach, but it can mean that the database file size grows quickly.

Scripts are the means by which the power of FileMaker is really exploited, in terms of managing data, and creating custom search-patterns. In version 7 you can now pass parameters to scripts, preventing the need to reproduce loads of scripts that basically do the same thing. New script steps include opening and resizing windows and managing accounts.

Macworld's buying advice

While there are no doubts of the benefits of the new version for users upgrading, the all-or-nothing approach across application, operating system and server software means that it's a major undertaking for any organization with multiple licences, and a client-server architecture. But this is a great upgrade, well worth the effort.

Martin Gittins


Define Database for "booklist"

The relationships graph provides access to data in one table from another. If a relationship is defined between two tables (even through another table), fields from one table can be accessed from the other.

Turning tables (left)
The real benefit of FileMaker 7 is the ease with which relationships can be defined between fields on different tables. For instance, in a contacts database you'd have one table for individuals and companies, with a relationship based on company name or ID. Once a relationship has been created, it's easy to pull data across from one table to display in the other – to display company address information for a contact individual, for instance.

Landscape generation

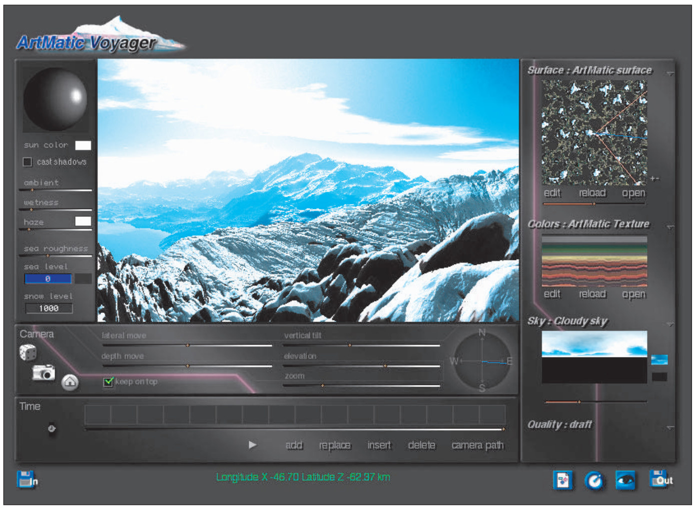
Artmatic Voyager 1.0

Publisher: U&I Software
www.uisoftware.com
Pros: Low system requirements; stable; hundreds of megabytes of preset files included on CD; inexpensive.
Cons: Cannot import file formats from other 3D programs; only four planets available (to create new planets you must purchase stablemate Artmatic Pro 3.5).
Min specs: 400MHz G3; Mac OS 9/OS X (10.0.0 or higher); 128MB RAM.
Price: $99.
Star Rating: ★★★★/8.5

Those who are fans of the old 3D landscape-generation stalwart Bryce, will be interested in the latest offering from Eric Wenger. Wenger is the algorithmic whizz-kid who came up with the groundbreaking Bryce in his spare time way back in 1994. With the release of Artmatic Voyager, Wenger and the team at U&I Software may just be on the way to providing us with a worthy successor to the now discontinued Bryce.

Anyone who has ever used Bryce will find Artmatic Voyager instantly recognizable. Indeed, the program's interface shares many similarities with its spiritual predecessor. Like Bryce, all of Artmatic Voyager's controls are available on screen via a combination of sliders, pop-up menus and clickable icons. Similarly, Artmatic Voyager features the unique 'organic' look-&-feel that long-time Bryce users either loved or hated. Without your glasses it's almost impossible to tell the difference between the two packages.

But while both programs feature that interface and allow the user to create, edit and render photorealistic 3D worlds, it is how they go about doing so that separates the two. Unlike Bryce, which uses polygon-based techniques to generate landscapes, Artmatic Voyager uses procedural functions that generate terrain maps that can be rendered as three-dimensional landscapes. For anybody who wishes to create their own world in under six days, this approach has a number of advantages and disadvantages.



The sky's the limit
While you can't make or move mountains in the way that Bryce allowed, Artmatic Voyager does offer some control of the environment. This includes control over ambient colour, wetness, haze, snow level and water level. You can also choose from a range of preset skies and surface textures for the mountains.

Instead of letting the user create individual planes, terrains, rocks and plants in a scene, Artmatic Voyager has the option of choosing from four different 'planets'. Each planet is theoretically four times the size of the Earth, and filled with mountains, trees and water. From here the user can go on a virtual journey, moving the camera through a huge diversity of landscape and taking rendered snapshots or making animated movies as he goes.

Macworld's buying advice

All of this lets you create superb images and movies of imaginary worlds that are every bit as good as rival software packages such as Vue D'Esprit. Because Artmatic Voyager's procedural approach uses considerably less processor power than polygon modellers, you can do so quickly and efficiently – even on machines that aren't top of the range.

What you can't do, however, is import models from other 3D packages. Nor is there modelling for adding objects into a scene. This means that for the time being your worlds are destined to be sad, empty places; rather like the pictures that are being beamed back from Mars. Still, if the program catches on, this is an issue that is likely to be addressed in a future release of this excellent package.

Ian Probert

Screen-capture tool

Snapz Pro X 2

Publisher: Ambrosia Software
www.ambrosiasw.com
Pros: The best screen-capture utility for the Mac.
Cons: Needs a fast Mac for capturing movies.
Min specs: Mac OS X 10.2
Price: Snapz Pro X 2, $29; Snapz Pro X 2 with movie capture, $69; upgrade from Snapz Pro X 1.0 with movie capture, $20.
Star Rating: ★★★★★/9.0

Adobe
Illustrator CS
Strata 3Dpro 3.9
Combustion 3.0.1
Stitcher 4
Faster Find

This new version of Ambrosia's screen-capture tool takes it further ahead of the competition. Apple has offered it for download – an acknowledgement perhaps that its own screen-capture application, Grab, has room for improvement.

If you're in the business of creating tutorials, making training videos or producing CD-ROM products then Snapz Pro X 2 is invaluable. It lets you capture the full screen, a precise selection from the screen, objects from the screen such as windows, dialogs and menus, and even full-motion video of anything on the screen.

As soon as Snapz Pro X 2 is called, the main capture palette appears, giving access to four tools. The first three – Screen, Object and Selection – are all for static-image capture. The fourth – the Movie tool – is for recording whatever is happening on-screen.

The Screen tool captures the full screen. Snapz Pro X 2 is fully aware of multiple monitors. In order to capture more than the main screen, just Shift-Click inside the second screen. The object tool captures windows, menus, submenus and any other object, while the Selection tool allows the user to select any portion of the screen for capture. The Movie tool is used to record a QuickTime movie of a selected area of the screen with either a voiceover narration or whatever audio your Mac is outputting as a sound track to the movie.

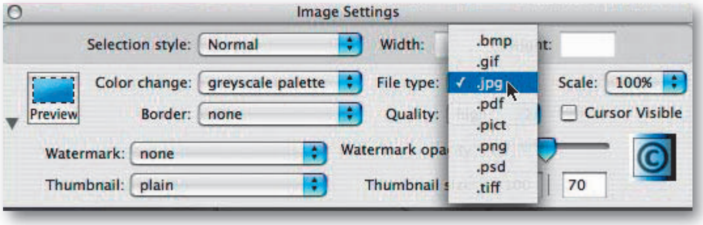


Image Settings
Selection style: Normal
Width:
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File type: ✓ .jpg
Scale: 100%
Border: none
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Watermark: none
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70

Watch the birdie
Snapz Pro X 2 provides a multitude of options for capturing, scaling, and saving screenshots.

Preview and formats

On each of the tool palettes, there's a button that can be used to show a preview of the image with the chosen settings. If unhappy with the result, just change the settings – the preview is updated on the fly.

Static images can be saved in a variety of formats: BMP, GIF, JPG, PDF, PICT, PNG, PSD or TIFF. Snapz Pro X 2 uses Ambrosia's Clearscale technology to scale images or movies up or down from 10 per cent to 400 per cent of the original size.

The video-capture engine of Snapz Pro X was completely rewritten for Snapz Pro X 2 and should be capable of capturing large areas of the screen at a high frame-rate. That said, video capture puts a huge load on your Mac, so even with a very fast Mac, don't expect spectacular results from full-screen capture.

Snapz Pro X 2 is intended to replace the built-in screen-capture capabilities in OS X, so you should leave it running all the time; the application uses next-to-no system resources when idle.

Macworld's buying advice

This new version of Snapz Pro also adds a host of features, from a new interface, a preview mode, a new video-capture engine, a Fatbits tool that lets you zoom in on the pixels on your screen, to automatically generating image thumbnails. Snapz Pro X 2 really has no competition.

John Dixon

In response to the threat posed by After Effects 6.0, Discreet has armed the latest version of its compositing tool with a non-linear editing (NLE) environment, derived from its high-end Edit system. Combustion 3 also adds Flash animation output from Combustion's vector-paint tools and JavaScript-based expressions for expanding animation capabilities. There are new customizable paint brushes, stained-glass lighting effects and QuickTime capture from DV devices, as well as a host of other enhancements.

Compositing can be thought of as Photoshop for video, but Combustion can also handle up to film strength 32-bit (float) resolution material. The basic building block of Combustion is the composite, a stacked arrangement of multiple layers of footage.

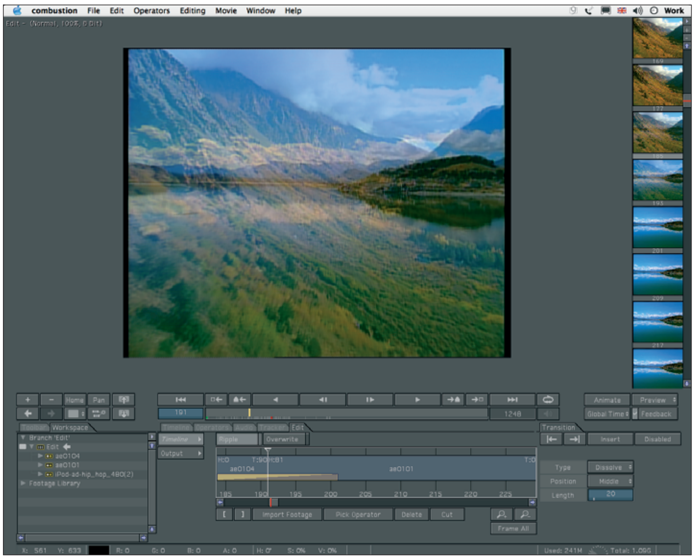
The similarity with Photoshop ends there, as you can also arrange layers in 3D space, depending on the compositing mode. 3D composites bring cameras and lights to the mix, along with the ability to transform layers in the Z-axis and add render effects. Layers also possess surface properties that affect how they appear and how they react to light – much in the same way materials behave in 3D applications. Version 3.0, for example, adds an effective stained-glass lighting effect that allows layers to cast coloured shadows – however it has to be said that this is something that Adobe introduced in version 5.5 of After Effects.

The timeline

Compositing also involves arranging layers in a timeline, which is used to control when they appear on the 'stage' and for how long. Layer segments can be trimmed, slipped and split, and there's now the new ability to add markers in the Timeline for better organization. The other main component of Combustion is the Operator. This is a function that modifies a layer or a composite and can range from a simple blur to a complex Paint animation or a particle-emitter effect.

The effect of operators can be modified by adjusting their properties – this can be done over time, using keyframes to create animations. Version 3.0 can save the settings for individual operators for future use. As you add operators and layers to composites, a process tree is built automatically. Each operator in a workspace can be viewed in its place in the tree by switching to the Schematic View. This is a skeletal network of nodes and branches, where you can directly manipulate the process tree, adding operators, changing their inputs and outputs and making connections. Of course, whatever you change in the Schematic view is reflected in Combustion's other tools.

Imported footage becomes another layer ready for compositing or editing, which is where the Edit operator makes an appearance. This offers a new way to create image sequences in Combustion by cutting and pasting between segments of imported footage. You can edit sequences in the Edit operator's timeline and apply wipe, dissolve and cut transitions between segments. All in all, it's a useful, if limited, way to perform some non-linear editing without leaving the package.



Paint is another operator that you can apply to a layer. Adding it to the video footage means you can do anything from simple retouching to adding full motion-tracking and rotoscoping effects. An enhancement to Paint is the ability to create custom brushes.

There are three ways of doing this: drawing a custom shape freehand using the Paint tools, creating a brush from one frame of a particle emitter, or by importing a frame of footage and masking out irrelevant parts of the image. The result is similar to the that of the image hose in Painter – spraying custom textures such as hair or fur, or creating effects such as pencil or chalk lines on footage. In common with all brushes in Paint, strokes made using the custom heads are resolution-independent, editable, and key-frameable.

Another development is the Export to Flash feature in the Paint Controls panel. With this enabled you can create, transform and animate a limited number of Paint objects and their properties, then save your work as a .swf file. Combustion also has the Flash Player built in for previewing the results for any quick edits before export, and additionally outputs the file in HTML.

Animation really benefits from the addition of JavaScript-based expressions. Expressions are mathematical formulae that you can use to animate properties of layers or operators based on the channel value. You can also tie-in the behaviour of related channels to that of the original one. The Quick Pick expression tool is used to link a channel's value to that of a target channel, while using the integrated Multi-line editor you can define or edit your own JavaScript and ECMA-script compatible expressions. You also have at your disposal predefined scripts to use or modify from the context sensitive Expression Browser.

Plug-ins are a great strength of After Effects, and Combustion has been able to accept Photoshop and AE-compatible plug-ins for some time. Combustion 3.0 ships with RE:Vision Effect's RE:Flex – a set of three operators for warping still and moving images and meshes which – it previously sold for $600.

Macworld's buying advice

Though capable of complex motion-graphic effects and layer-based manoeuvring at a variety of resolutions, Combustion is a user-friendly application. The Mac version seems to have taken on board some enhancements over the earlier Windows version, as well as being able to provide dual-G5 support. Combustion is a power-hungry beast – but if you pack one of the latest Macs chock full of RAM, you'll be in for a treat.

Michael Burns

Pro compositing tool

Combustion 3

Publisher: Discreet
www.discreet.com

Distributor: New Media Research, 020 7255 2700

Pros: Edit operator brings simple NLE functionality; JavaScript-based Expressions speed up animation process; custom brushes add creative freedom; Flash export expands product user-base.

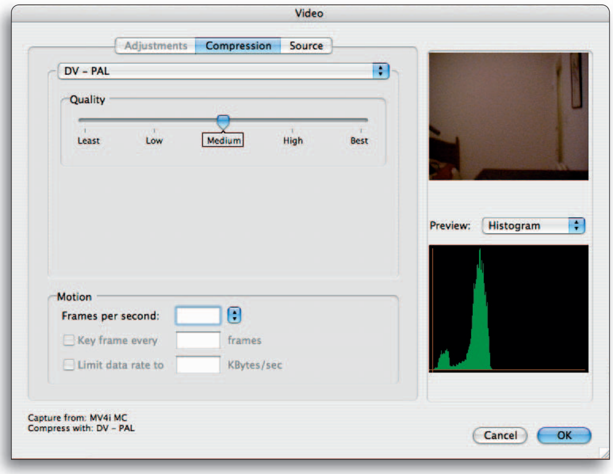
Cons: Flash export limited; application very memory hungry; limited tutorials.

Min specs: Power Mac G4, 800MHz; Mac OS X 10.2; 20GB main hard-drive with 120MB free space (70MB for the software, 45MB for help), 512MB RAM.

Price: £725; upgrades, £140. Prices exclude VAT.

Star Rating: ★★★★/8.6

Video import
Combustion lets you import video as QuickTime clips (.MOV), TARGA and Video for Windows (.AVI) formats, among others. Using the new Quick Capture window, you can also capture video and audio footage directly into the Combustion workspace from a DV camcorder. This actually performs better than the Windows version of the product, with the bonus ability to view histograms and waveforms as well as a preview of the footage. However, this function consists only of a pair of record and pause buttons, with none of the device control you'd find in a digital-video package.



DV – PAL

Preview: Histogram

Capture from: MV4i MC
Compress with: DV – PAL

Macworld reviews headphones

Shure E2c

Sennheiser HD 437

Sennheiser HD 280 Silver

The iPod's earbuds may not live up to your high demands if you consider yourself an audiophile. We looked at other options for music lovers on the move, with solutions for every preference and budget.

iPod users stand out in a crowd with their white headphones – so much so that they're now being targeted by muggers. The new **Apple In-Ear Headphones** stick with the all-white tradition.

If you aren't used to in-ear headphones, it can be a little odd at first. The soft rubber sleeve is supplied in three sizes, to fit a variety of ears (or external auditory meatus, if you want to get technical). Because the earpiece fills this space, external noise is cut to a minimum, meaning you don't have to crank up your iPod to hear it on the train.

The quality of the Apple In-Ear Headphones is a bit disappointing – not bad exactly, about the same as the regular earbuds. I had hoped they would be better. Also some of the practicalities of in-ear headphones were a bit of a turn off. They didn't stay in any better than the earbuds, regardless of which size rubber sleeve I used. Other people may have better luck, but as far as I know I have fairly standard ears.

Sound loops

The next step up from the Apple In-Ear Headphones costs twice the price, from £35 to £70. The **Shure E2c Earphones** are considerably bigger than the Apple models, and don't hang down from the ear in the same way. The E2c loops the wires over the back of your ear to either join behind your head or just hang down like normal. The price tag of £70 is quite high for headphones, and I'm not the kind of person to spend twice the money on something without getting twice the performance. I'm happy to say I wasn't disappointed. They're a bit fiddly at first, and take some getting used to, but the sound you get is great. You also get a nifty carrying case, a selection of foam and rubber sleeves, and a little stick for clearing earwax. The sound is warm and full – far less tinny than the Apple earphones. The E2c also lets less sound escape, so you're unlikely to annoy fellow passengers on the bus or train.

Deaf jam

In testing I travelled to and from work with the iPod at only half volume, and it remained loud enough on all forms of transport. Be warned though, when you're listening with this type of headphone you are deaf to the world. Crossing roads and even walking on the pavement can be hazardous. They block all contact with the outside world, which can be a bit disconcerting. But the sound is amazing.

I was so impressed with the E2c earphones that I was curious when Shure told me about the latest **E3c Earphones**. These cost £150 – double the price of the E2c, and four times the price of the Apple In-Ear phones.

I doubted the ability to be twice as good as the E2c models, but when I tested them I was startled. They are measurably better, with a bigger range, and an even meatier sound. Whether they are twice as good I'm still not sure, but they're close. They're also smaller and lighter, with the same carry-case and even more sleeve choices and sizes.

The one weird thing is that although it pumps out bass, you don't feel it the way you do in front of a stack of speakers. It sounds like it should vibrate your whole body, but it doesn't.

I never thought I would even consider spending £150 on earphones, but I am. Worse still is the news that Shure has just released the E5c headphones – at £370. I daren't try them, because they're probably worth the money – and I can't afford them.

If in-ear headphones aren't for you, Sennheiser has a great range of more-traditional headphones. The **PX 200** is a compact folding model that offers a semi-closed headphone but without covering the whole ear. It keeps ambient sounds out, while keeping your music mostly to yourself.

The comfortable padding is wrapped in soft vinyl, so is more weather-resistant than plaint foam. It also keeps your lugs warm in the cold weather.

The sound is better than your average earbuds, but it still doesn't have the same bottom end of more-expensive models we looked at. At £40 it makes a good upgrade from earbuds, and at only £5 more than the Apple in-ear headphones you get a lot more bang (and bass) for your buck.

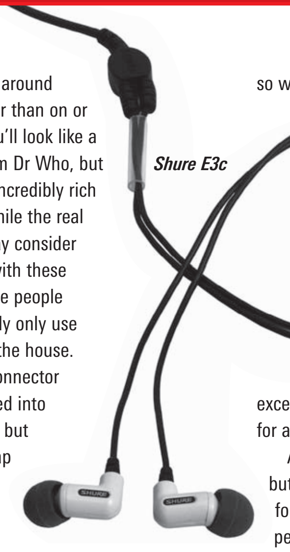
If you want even more, Sennheiser has the **HD 280 Professional** monitor headphones. These bad-boys are designed for DJs, and other professional work where you need to hear audio in a noisy environment. They're circumaural – the

Product	Manufacturer	Distributor	Pros	Cons	Price	Star Rating
Apple in-ear headphones	Apple www.apple.com/uk		Retains the trademark white look.	Sound is no better than the original earbuds; tendency to drop out.	£35	★★★/6.5
E2c in-ear headphones	Shure www.shuredistribution.co.uk	Hand Held Audio 020 8880 3243	Great sound, carry case; good selection of sleeves ensure a good fit.	A little bulky compared to the E3c; a bit pricey.	£76	★★★★/8.5
E3c in-ear headphones	Shure www.shuredistribution.co.uk	Hand Held Audio 020 8880 3243	Superb sound; small; carry-case; seven sleeve options included.	Expensive, but worth it.	£149	★★★★/8.7
PX 200	Sennheiser www.sennheiser.co.uk	Sennheiser 0800 652 5002	Compact; excellent sound; keeps sounds in the headset; snazzy case; good value.	Can be a bit fiddly to fold until you get used to them.	£40	★★★★/8.6
HD 280 Professional	Sennheiser www.sennheiser.co.uk	Sennheiser 0800 652 5002	Best sound in test; fully enclosed.	Not really practical for outside use.	£99	★★★★/8.7
HD 437	Sennheiser www.sennheiser.co.uk	Sennheiser 0800 652 5002	Lighter than the HD 280; . excellent sound; inexpensive	Noisy from the outside; bigger than the foldable model.	£19.95	★★★★/8.4
MX 500	Sennheiser www.sennheiser.co.uk	Sennheiser 0800 652 5002	Cheap enough to be disposable; volume control.	No better that the original Apple earbuds.	£19.95	★★★/6.7

PRICES INCLUDE VAT

Macworld.co.uk Subscribers can search Macworld's Reviews database online (**www.macworld.co.uk**), updated throughout the month

padding goes around your ear rather than on or in it. Sure, you'll look like a cyberman from Dr Who, but the sound is incredibly rich and bassy. While the real audiophile may consider walking out with these monsters, sane people would probably only use them around the house. The chunky connector can be screwed into a sound desk, but is likely to snap your iPod socket because it protrudes so far. While I wouldn't consider these for wandering around near traffic, they are great for noisy GarageBand tinkering or gaming, with minimal spousal annoyance. Although they aren't suitable for all occasions, they're well worth the £99 price tag.


Shure E3c

If you like the idea of the massive headphones but don't have the nerve to wear them in the street, the smaller **HD 437** is less heavy and much cheaper at only £20. The smaller headphones aren't enclosed, so while they sound great from the inside, they're quite loud from the outside too. Fellow passengers won't like it, so bear that in mind before you crank-up the iPod on the bus. But used responsibly, they far exceed any earbud style headphones, for around the same price.

All the high-end headphones are cool, but not everybody wants to spend a fortune on something that for most people almost counts as a consumable. Headphones get battered and broken with regular use. And while the warranty on the more expensive headphones is usually two years, if you know you're rough on your gear it might be worth buying something cheaper. Sennheiser's £20 MX 500 earbud-style headphones are basic, but sound as good as the Apple earbuds, with the added feature of a volume control. They come in a winding carry-case, and are well worth the money. When your cat chews through the wires, or you drop them in a puddle, you just buy a new pair.

Macworld's buying advice

If you want to get the best from your iPod, Apple-branded headphones aren't the best option. It's nice to be in the white-earphone club, though some impostors are now appearing – most notably from MacAlly. But for the best sound you'll have to look elsewhere.

I'm fond of the in-ear models: they're small and neat with great sound, but not without drawbacks. The danger of not being able to hear traffic, bicycles on the pavement, or train doors beeping is not to be underestimated. Also they can be a bit fiddly to put on at first. You do, however, get what you pay for – and for excellent portable sound they can't be beaten.

If you prefer the larger earphones, the Sennheiser PX 200 foldable units offer the best performance for the money. Again, they take some getting used to with the complicating folding mechanism and carry-case, but are worth the effort.

At £40 you won't get a better sound. I'm also fond of the big Sennheiser HD 280 professional headphones, but they are really only practical for use inside.

If you just want replacement earbuds, the MX 500s from Sennheiser are a cheap, decent-quality option.

David Fanning

Digital music player

Squeezebox

Manufacturer: Slim Devices
Distributor: Multitask Computing (0871 250 5619)
www.multitask-computing.co.uk
Pros: iTunes on your hi-fi; stylish; wireless functionality.
Cons: Not cheap; wireless connection requires strong signal – check first.
Price: £249 including VAT.
Star Rating: ★★★★/8.2

CDs contain digital music – but the real potential of the medium is only just being realized. Apple is right at the heart of the revolution. But digital music today isn't just about the iPod and downloading tracks from the Music Store. It's changing the way that we listen to music in our homes, as well as on the move with Apple's ubiquitous little white player (and soon-to-be-released even littler silver, gold, pink, blue or green players).

I've imported a lot of my CD collection into iTunes on my Mac at home – 13 days and 55 minutes' worth to be precise, taking up 20.48GB. Recently purchased CDs live in a drawer under the hi-fi, but the old ones have been removed from their jewel cases and stored in CD wallets (www.caselogic-intl.com) – four hold over 800 CDs and their liner notes, thus saving acres of wall space previously heaving under the strain of the collection. Don't worry, I'm not so anal as to colour-code them or enter their details into a FileMaker database.

When I'm working in my study, I can fire up iTunes and crank up the Harman-Kardon speakers. But back in the living room I have to either resort to the CDs or plug the iPod into the hi-fi.

If you're at all worried about frying your iPod battery via high usage (and all batteries do run dry eventually), you'll want an alternative to get your MP3s and AAC files from your Mac to the hi-fi.

As reviewed in our March 2003 issue, the number-one device for linking Mac and hi-fi is the SliMP3 from Slim Devices. This static MP3 player streamed music from computer to hi-fi over Ethernet or a wireless connection. Unless you have Ethernet running underneath your floorboards, a wired connection isn't very décor-friendly – so the wireless option worked best. Unfortunately, this meant buying a wireless bridge for the SliMP3, costing around £75.

Now, Slim has a static player that incorporates an 802.11b wireless bridge. The Squeezebox is everything the SliMP3 was and more. For example, it supports Apple's now-favoured AAC format as well as MP3. The unit is also smarter and more living-room-friendly.

Setup is relatively painless (follow the manual and onscreen instructions). The fluorescent-green interface is friendly and easy to read up to about 10 feet away. You can browse and search through your music collection via a remote control or Web browser. Searching is easier than on the iPod, but browsing is a bit slower.

Remember that a wireless device performs only as well as your wireless network. The inexplicably poor AirPort signal strength in my house (35-50 per cent) meant that the Squeezebox was prone to cutting out halfway through a song – while it performed flawlessly via a direct Ethernet connection. Try adding an external aerial to your Mac or Base Station to improve matters. Squeezebox supports AirPort's 802.11b, but AirPort Extreme's 54Mbps is backwards compatible.

Macworld's buying advice

Having all your music – and the legion of Internet radio stations – readily available at the click of a remote control (without the need for a giant CD jukebox) is liberating. Connecting an iPod to your stereo is certainly simpler, but you may be limited by its capacity – and the lack of a wireless remote control chains you to the hi-fi.

Squeezebox isn't just a pretty gadget, it's the future of digital home entertainment – if that world has reasonable wireless signal strength.

Simon Jary

Now Playing (1 of 48)
1. Symphony No. 9 in D Minor
00:48
SLIM DEVICES

Top-notch photo prints

Bubble Jet i990

Manufacturer: Canon www.canon.co.uk 08705 143 723
Pros: Near-perfect quality; lightning fast; dual paper trays; looks great.
Cons: Dye-based inks.
Min specs: USB.
Price: £299; wireless print server WP-20, £140. Prices include VAT.
Star Rating: ★★★★/8.9

Inkjet printing is a mature technology, which means advances in the technology are no longer giant leaps. Just about all inkjet (or bubble jet as Canon calls them) printers are capable of photo-quality output. Canon's latest offering is the Bubble Jet i990, which boasts high-quality output at lightning speeds, plus optional wireless printing.

Inkjet printers are often used in the home, so looks are more important than office laser-printers. The i990 has a brushed metal top – real metal, not just shiny plastic. This sits well on its own, or better still next to a G5. The PictBridge, the wireless print server, also comes in a matching metallic finish (though this time it's plastic).

The print quality is outstanding, with no hint of banding, grain, or any other artefacts: it could pass for a photographic print, even under close inspection. This is by far the best quality I have seen from a Canon inkjet, bringing it up to par with the top Epson and HP photo-printers. I'd like to say that it's better than the competition, but the top products in this area are so close in quality that it's difficult to say.

Once visual flaws are gone from a print and the colours are correct, there's little more to say. If you need a magnifying glass to spot flaws, then they aren't going to be seen anyway.

The print quality is largely due to the seventh ink – red. Seven colours means that the i990's colour gamut is extended. You may remember that the Epson R800 has eight ink tanks, but one of these holds a clear gloss finish, so it has the same number of colours as the Canon. While the quality is close, there's a major difference in the characteristics of the ink. Canon uses dye-based ink, while the Epson R800 uses pigment inks. This means that the Epson output will last much longer before fading.

Top of the pile
You can't improve on perfection – and this and the other top of the range photo printers are pretty much perfect when it comes to output.

One thing that does nudge the i990 ahead of the crowd, at least in one particular area, is the speed. The i990 has a high-density print head that covers a wide area with each pass. That means fewer passes, which adds up to fast printouts even when there's a lot of coverage on the page.

As ever, the speed relies to a certain extent on the processing power of the computer, but we managed to get a fully covered page to print in just over three minutes using a dual-processor G5. That's nothing short of amazing, even taking into account the G5's muscle.

The connection is USB 2.0, which will also work with the original USB 1.1 found in Macs older than the current G5s. There's a slight impact on the speed, but it's nothing to worry about. Even printing using the wireless option didn't do much to slow the printer.

The optional wireless print server, the WP-20, is a nifty addition, though you could get the same effect by plugging it into AirPort. If you want to match collars and cuffs, the WP-20 looks the part and costs £140.

Macworld's buying advice

The i990 is a fantastic printer – fast and excellent quality. The price is decent too: at £299, it's at the top end of the photo-printer range, but the quality and speed are worth it. My only concern is that the dye-based inks will fade quicker than the Epson R800, but Canon claims 25 years light-fastness on the right paper, so that should be enough for most people.

There are other thoughtful features, such as dual paper trays and a direct print port for printing from compatible cameras, which make this a great buy for any digital-photography enthusiast.

David Fanning

Mass duplication

DSR Tower

Manufacturer: Microboards Technology www.microboards.co.uk, 0845 230 7800
Pros: Fast; simple to use.
Cons: Can't copy encrypted movies (which you shouldn't be doing anyway).
Min specs: Nothing – not even a computer.
Price: £1,730 excluding VAT.
Star Rating: ★★★★/8.5

Now that so many new Macs have a DVD burner as standard, and the rest have a DVD player, DVD is becoming a standard for backup, archiving and sharing data. The DSR Tower is a simple-to-use DVD/CD duplicator capable of burning up to eight discs at a time, and as many as 32 full DVDs per hour or 96 full CDs per hour.

The interface couldn't be simpler. There are two buttons on the controller – yes and no. The LED screen asks things like "Would you like to burn a disc?" or "Would you like to copy to the hard drive?". Navigation is simply a matter of answering Yes or No.

The top drive is a DVD reader, and the other eight are Pioneer A06 drives. Similar to the Apple SuperDrive, the A06 is the next model up, capable of both recording both DVD-R and DVD+R discs, plus CDs. It will record DVD-R discs at 4x speed, but the DVD+R discs go slower at 2.4x. There is a 40GB hard included, so you can copy disc images to the hard drive for future use.

Macworld's buying advice

The DSR Tower is a bit of a one- (OK two-) trick pony. It duplicates CDs or DVDs. It does it in the simplest way possibly, not even requiring a Mac. So if that is something you need, then it's a great solution. The price tag of £1,730 is reasonable, and other configurations are available with more or fewer drives, so there should be something to suit most budgets.

David Fanning

MICROBOARDS Technology

Reverb creation

IR-1 Parametric Convolution Reverb

Publisher: Waves www.waves.com
Distributor: Sonic, 01525 840 400
Pros: The best convolution reverb available as a plug-in.
Cons: Uses lots of DSP and is more expensive than the competition.
Min specs: 867MHz G4; Mac OS X 10.2.2; 512MB RAM. Supported on host applications via RTAS, HTDM, MAS or Audio Units.
Price: HTDM version, £915; Native version, £620. Prices exclude VAT.
Star Rating: ★★★★★/9.0

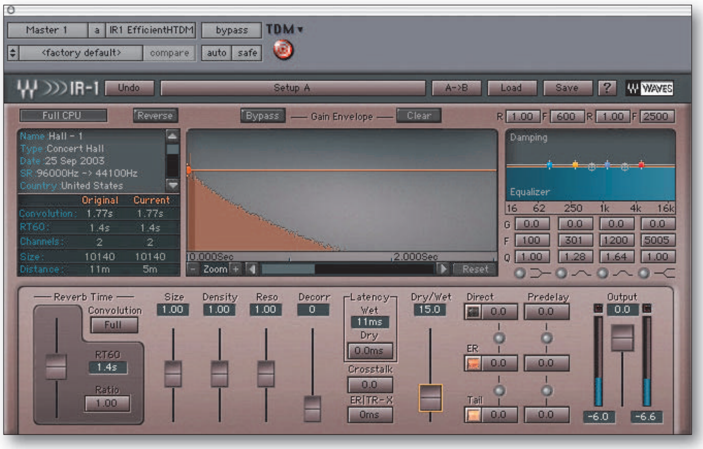
So good it hertz
Waves reveals that Parma university's Angelo Farina has recorded and processed the Impulse Responses at 96kHz using state-of-the-art techniques to achieve the highest quality.

Waves introduced its new convolution-based sampling reverb at the January NAMM show in the USA. This is obviously intended to blow the competition (Altiverb and Space Designer) out of the water – and it does, but at a price.

As Audio Ease did for Altiverb, Waves has developed an extensive library of impulse responses from renowned acoustic spaces for the IR-1. And like Emagic did for Space Designer, Waves has also taken responses from over 50 classic electronic devices. The difference is that Waves has done the job right – the company collaborated with acoustics Professor Angelo Farina of Parma University in Italy, funding his research while he developed a world-class library for the IR-1.

But the best thing is the amazing selection of well-known acoustic spaces included in the library. Legendary studios such as Westlake Audio Studio D, the Masterfonics Tracking Room, the Sydney Opera House, and the Ryman Auditorium in which the Grand Ole Opry is staged, are a bit more interesting than Gerhard Lengeling's room in the Emagic building.

The other big difference is that Waves IR-1 is the first convolution-based reverb to provide parameters that actually affect the convolution – they don't just filter the result as with Space Designer. Conventional digital reverbs offer more control of individual reverb parameters, but lack accuracy when simulating real acoustic spaces. Convolution based sampling reverbs reproduce natural acoustic spaces much more accurately. But they don't provide the familiar reverb control parameters offered by conventional digital reverbs. IR-1 offers the best of both approaches – convolution reverb plus conventional control parameters. You can control room resonance, de-correlation, damping, CPU usage and convolution length for the convolution process. You also get conventional controls for reverb time, size, decay envelope, early reflections and EQ.



Name Hall - 1
Type Concert Hall
Date 25 Sep 2003
SR 96000Hz -> 44100Hz
Country United States

	Original	Current
Convolution:	1.77s	1.77s
RT60:	1.4s	1.4s
Channels:	2	2
Size:	10140	10140
Distance:	11m	5m

So, in contrast to Altiverb, you can lengthen the reverb time. And the IR-1 goes much further than Space Designer when it comes to providing parameters to tweak. For example, a graph-based multiple breakpoint envelope lets you re-shape the decay behaviour and, using the size parameter, you can vary the early reflections part of the IR to make the space smaller or larger. You can control the actual IR's reflections, resonance, and randomness to make the space clearer or denser. And you can colour the reverb sound using the built-in four-band paragraphic EQ.

Macworld's buying advice

From Sydney Opera House to the Knitting Factory, with many other famous venues in between, Waves IR-1 offers a better selection of high-quality natural-sounding Impulse Responses than you will find anywhere else. A bit pricey, perhaps – but this is the Rolls-Royce of sampling reverbs.
Mike Collins

Digital-music effects

FilterFreak & Phase Mistress

Publisher: SoundToys www.soundtoys.com
Distributor: Unity Audio, 01440 785 843
Pros: The best set of filters and phasers for Pro Tools TDM.
Cons: Uses lots of CPU power in Analogue mode.
Min specs: 500MHz PowerPC; Pro Tools TDM/LE 5.0; iLok hardware key for software authorization.
Price: FilterFreak, £199; PhaseMistress, £199. Prices exclude VAT.
Star Rating: ★★★★★/9.2

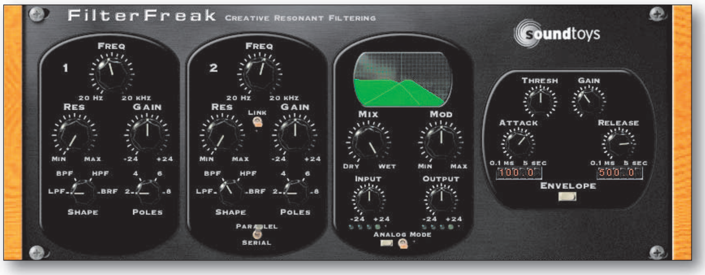
Two for the price of one
FilterFreak 2 provides two filters that can be used together. They are identical but can be set independently.

Fed up with vintage effects? Looking for something new? SoundToys has recently released the cutely named FilterFreak1 and 2 and PhaseMistress plug-ins for Pro Tools TDM systems.

One of FilterFreak's coolest features is its ability to synchronize its sweep to the tempo and downbeat in your music. This opens up a new world of creative filtering options, especially when you get two different types of filters dancing and sweeping in different directions with different patterns and with different sounds.

Some of the most popular phasers over the years have included the old Univox Univibe, MXR Phase 90, Electro-Harmonix Small-Stone, Eventide Instant Phaser and the Mutron Bi-Phase, which had two distinct phasers in one box. PhaseMistress lets you pick any number of stages between two and 24 – including all odd numbers, so you can recreate the sound of just about any previous phaser, or create entirely new phasing sounds.

FilterFreak and PhaseMistress share a common library of user-customizable modulation rhythms and LFO waveshapes, so you can create a sweep shape or modulation in FilterFreak or PhaseMistress and call it up from either plug-in.



The interfaces on these plug-ins have lots in common, with controls for filter Frequency and Resonance, wet/dry Mix, Modulation amount, and Input and Output level. Additional controls for LFO, Rhythm, Envelope, Random, Step and ADSR are displayed in a separate area in the window according to which of these has been selected using the pop-up menu. This is a neat way of avoiding the need for a large window for the plug-in.

A toggle switch engages Analog mode so that the sound will saturate in a similar way to real analogue gear. To minimize the DSP load, use FilterFreak1 instead of FilterFreak2 if you only need one band of filtering, commit the effect to disk by using AudioSuite or by bouncing to disk, and use Digital mode instead of Analog if possible.

Macworld's buying advice

The guys at SoundToys were responsible for designing industry-standard products as the Eventide H-3000 and DSP-4000 and DSP algorithms for high-end studio gear such as the TC Electronics Fireworx, GForce, and G-Major processors. So they really know their stuff.

This pair of plug-ins will let you create the widest range of filter and phasing effects possible. They just stomp the competition into the ground. The user-interface design is first-rate, with a wealth of tweakable parameters efficiently included. And the selection of instantly useable presets is so comprehensive that, most of the time, there will be little need to tweak – unless you really must!
Mike Collins

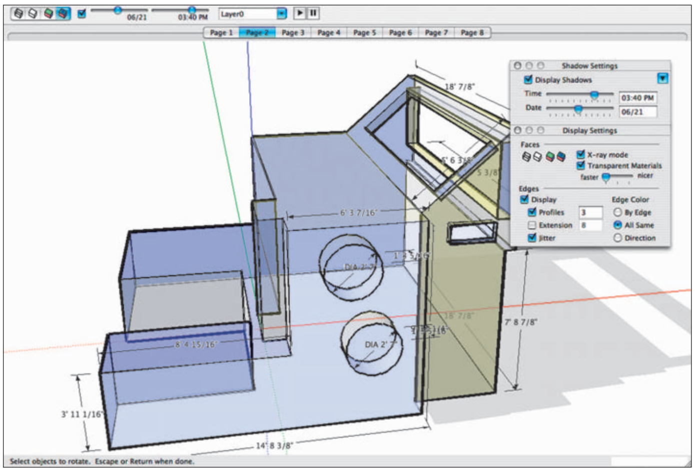
Even for architects and structural designers, 3D modelling programs are notoriously obtuse and difficult to get a handle on. Most are extremely specialized for object drawing and product modelling. They are not necessarily attuned to the creative spirit. CAD 3D is usually too mathematical in nature and interface, or too simplified and pedestrian.

Architects and designers who want a creative outlet that gives their ideas life have only a few choices. Primary among them is Sketchup 3.1. It is at once powerful, easy to use, and versatile. Sketchup 3.1 makes 3D design and architectural rendering as much fun as playing a game, and as intuitive as it has ever been on the computer.

Those familiar with drawing programs will have no problem getting started with Sketchup. The tools and their respective icons are easy to understand, and the interface is simple. You start drawing from a top down perspective, drawing out the floor plan of your design. You can, of course change the perspective and begin drawing from the elevation or any other position – even subterranean.

Most work is done with either the pencil or the Push-Pull tools. The Push-Pull tool can extrude surfaces and change and adjust a design in real-time. It can also change, align or combine surfaces.

Sketchup 3.1's expanded export features include the ability to create QuickTime walkthroughs of renderings. The program uses a page-by-page metaphor. Pages work as keyframes. You set up different views, either by changing your camera angle, or walking through your drawing to a different point, and designate the new point of view a page. When the project is animated, the program transitions smoothly from one page view to the next.



Select objects to rotate. Escape or Return when done.

Added dimension

Version 3.1's addition of dimensions and annotation further emphasizes its professional versatility. Lengths, diameters, and text annotations let users make accurate specifications that are visible no matter in which direction the 3D perspective is manipulated. We wish the developers added page rulers or a visible grid to complete the thought.

Sketchup's QuickTime feature is appealing to more than just architects and structural designers. Web-heads can take advantage of the beautiful 3D animation output, without having to learn about splines, and other techno-jargon. They can get right down to drawing.

Shadows can be adjusted for day, year and hour. Surface transparency and image and texture mapping all reveal Sketchup's unlimited potential. Shadows can be adjusted in each animation page to simulate a time lapse.

Tutorial files, available online, are excellent – teaching how complicated ideas can be achieved in simple steps. It must be said that these QuickTime tutorials are as entertaining as they are instructive. The narrator, obviously one of the developers, is candid and funny.

Macworld's buying advice

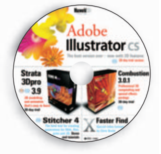
Sketchup is the antithesis to the overwrought CAD design tools available today. It is powerful, simple, and fun. And the projects you sketch out using this tool can be presented in as compelling and convincing a manner as your ideas will allow. Sketchup is that rare application that's worth every penny spent on it, and every hour you find yourself playing in it. Sketchup 3.1 is a gem of a designer's tool.

Andrew Shalat

Simple 3D modelling

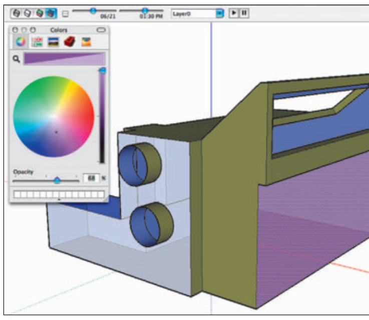
Sketchup 3.1

Publisher: @last software
www.sketchup.com
Pros: Easy interface; powerful drawing tools; 3D animation with QuickTime export; image and texture mapping; accurate dimensions; fun to use.
Cons: No global page rulers or grid.
Min specs: Mac OS X 10.2.
Price: $495; upgrade, $95.
Star Rating: ★★★★/8.2



Get the look

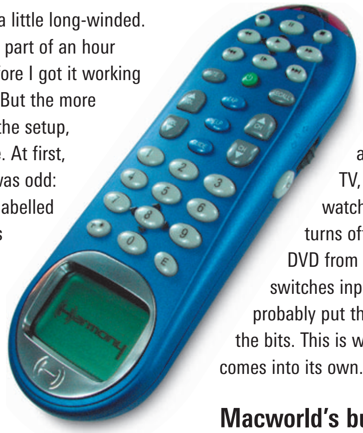
Renderings should consider light and shadow, ergonomics and aesthetics. Sketchup can do all those things.



Remote controls are the flotsam and jetsam in an ocean of high-tech gadgetry. In my house I have remote controls for my video recorder, DVD player, TV, digital box and stereo. Only five – that's pretty good going, I think; it used to be more. But I would like it to be less, like maybe one. The Harmony remote is a programmable remote control with a difference. It has a USB connection for easy programming with your Mac.

The first thing I need to tell you about the Harmony remote is that it is a US product, and while it knows all the US hardware it's less familiar with the local TVs and DVDs. That isn't an insurmountable problem. The Harmony Remote can cope – but straight out of the box, you're likely to run into these issues. The good thing is that the remote is programmable, so there's always a solution; it just takes a little time.

To set the remote up, you need a Web connection and USB. Once you're connected to the Harmony Web site, it's straightforward, if a little long-winded. It took me the best part of an hour fiddling around before I got it working to my satisfaction. But the more time you put in to the setup, the better it will be. At first, using the remote was odd: the buttons aren't labelled in the same way as the native remote controls. For a while I was using the Harmony Remote as a sixth remote, with the other five as backup for when I forgot how to do something. But as time progressed and I added more functions to the Harmony remote, the others were less important. I still keep them in a drawer nearby, but they've been retired.



The controls are quite sophisticated, using a lot of buttons, plus a scroll wheel to control what goes on in the LCD display. You can make single button clicks do multiple things, such as switch from watching TV, or listening to a CD to watching a DVD. With mine it turns off my digital box, selects DVD from the surround system, switches inputs on the TV and could probably put the popcorn on if I had the bits. This is where the remote really comes into its own.

Macworld's buying advice

I would certainly recommend this for anybody with a complicated home-cinema setup. Whether it's worth the hefty £200 price tag is another matter, however. If I were to ask my wife what she'd prefer, an iPod mini or a fancy remote control, I think I know what the answer would be.

David Fanning

Versatile remote

Harmony Remote SST-768

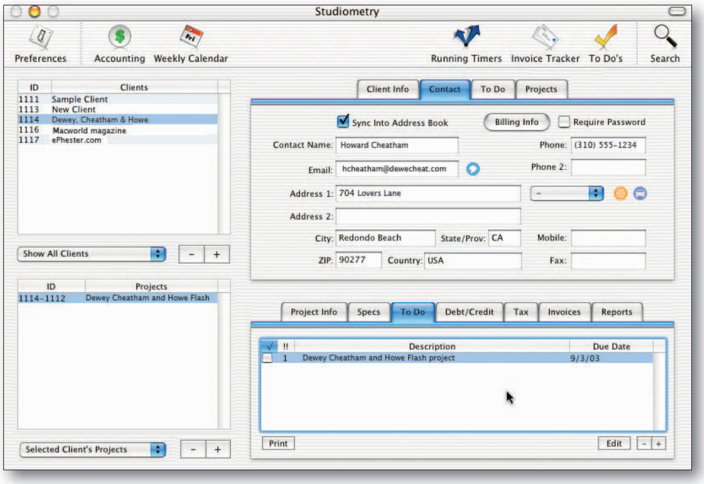
Manufacturer: Harmony
www.harmonyremote.com
Distributor: Invision UK, 01449 677 233
Pros: USB-programmable; does the job of many remotes.
Cons: Takes a while to set up; very expensive.
Min specs: USB; Internet connection; remote-controllable devices.
Price: £200 including VAT.
Star Rating: ★★★/6.9

Project management

Studiometry 1.1.4

Publisher: Oranged.net Software www.oranged.net
Pros: Interface makes it easy to get started; project files are easily and quickly accessible; work timer is an asset to any small design studio.
Cons: Confusing invoicing and numbering system; limited ability to import client data; complicated HTML-based invoice layouts.
Min specs: Mac OS X.
Price: $54.99 online.
Star Rating: ★★★★/7.8

Adobe
Illustrator CS
Strata 3Dpro 3.9
Combustion 3.0.1
Stitcher 4
Faster Find



ID	Clients
1111	Sample Client
1113	New Client
1114	Dewey, Cheatham & Howe
1116	Macworld magazine
1117	ePhester.com

☑ Sync Into Address Book
☐ Require Password
Contact Name: Howard Cheatham
Phone: (310) 555-1234
Email: hcheatham@dewecheat.com
Phone 2:
Address 1: 704 Lovers Lane
Address 2:
City: Redondo Beach
State/Prov: CA
Mobile:
ZIP: 90277
Country: USA
Fax:

ID	Projects
1114-1112	Dewey Cheatham and Howe Flash

√	!!	Description	Due Date
☐	1	Dewey Cheatham and Howe Flash project	9/3/03

Familiar interface

Studiometry adopts an Aquafied interface, which makes its functions easy to identify.

One of the most frustrating and tedious aspects of working as a freelance designer is keeping track of project incidentals. Billable hours, invoices, design notes, project files, and the like often end up scattered all over your hard drives and workstations.

If you want to rely on something other than your memory, handwritten notes, Stickies or the Mac's hierarchical folder system, you need an application that organizes your projects in an efficient and easy-to-access manner. The project-management application Studiometry 1.1.4, from Oranged.net Software, attempts to corral your work in one central location, and it almost succeeds. If you don't mind using Studiometry for all your file-management and organization chores except invoicing, then this application can be an asset. But Studiometry falls flat when it comes to accounting: its billing feature is more work than it should be.

Organize projects visually

Studiometry's familiar and intuitive layout takes interface cues from Apple applications such as iTunes, iPhoto, and Address Book. It displays one large window broken into functional panes. You can easily move from the window to Studiometry's main sections: Client Info, Contact, To Do, and Projects. Studiometry's design resembles that of Apple's Address Book, which is sometimes an asset and sometimes a limitation. Address Book, while a convenient tool, isn't a professional-level contact-management system, and its limitations become clear when you import information from Address Book into Studiometry.

Project management begins with the client file. You can start a client list from scratch, or you can import client data from Apple's Address Book or any vCard-based contact-management list. Studiometry lets you drag-&-drop vCards right into its Contacts section. Unfortunately, not all designers use the vCard format. I wish Studiometry could import tab-delimited data, since that would accommodate users who keep their contacts in database applications.

A Studiometry client file contains the same information as an Address Book file. Regrettably, Studiometry doesn't allow multiple contacts under one client. Also, you can't import Address Book groups as one vCard. If you have more than one contact at a company, you must record that information somewhere other than the Client Info section or the Contact section. This inflexibility is a major oversight.

Once you've created a client file, you can assign working files to a project. Studiometry assumes that projects will have clients attached to them. Therefore, you can't open any working files without first establishing a contact. This extra step may limit how you manage your information. All further organizational actions and relationships stem from the way you set up this window; it's how you access your invoices, reports, and other information pertaining to the project.

You can add folders, graphics, or documents to a project by dragging and dropping them into that project's window. You can also track the relationships of linked files in a project.

Studiometry's Running Timers feature is an efficient way to track your billable time. Clicking on the large Running Timers icon that sits atop the main window lets you attach a work session to a given project. If nothing else, this is a handy utility for figuring out how much time you spend working on a project.

A few limiting features

For all its ease, Studiometry has some time-consuming and nonsensical drawbacks. Its bill-tracking and invoicing system is confusing and difficult. In spite of the program's comfortable Aqua interface, Studiometry's Debt/Credit feature lacks the convenience and efficiency the rest of the program provides. The feature's name is confusing enough. I really didn't feel confident enough in this complex, byzantine system to submit my billing and financial information to it.

Studiometry's project-identification system is also limiting. It assigns numbers to projects according to individual clients, rather than letting you create a code for an entire company. Multiple clients can have the same invoice numbers, differing only in their client code prefix. Unless you're in love with complex and cryptically redundant codes, Studiometry is not the billing solution you want. I was very disappointed that Studiometry offered the invoice templates only in HTML code.

These days, thanks to WYSIWYG editors and Web-design suites, many users forgo code-oriented layout for visual layout schemes. The same principle should govern Studiometry's invoicing features. Most designers are visually oriented, but Studiometry's templates are not.

Studiometry's documentation can be confusing, but for the most part, it takes you quickly into this application's universe.

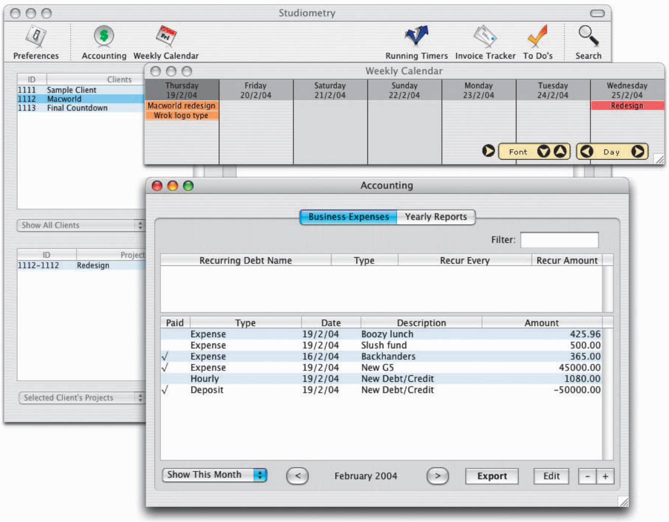
Macworld's buying advice

Oranged.net Software has put many project- and contact-management pieces in place to build a powerful application. Sadly, not all the pieces make perfect sense. While Studiometry 1.1.4's project and client files, to-do section, and timer feature work well together, limitations in the program's Client Info interface, and a complicated invoicing and billing system, bring this management vehicle to a screeching halt. The company needs to improve the program's limited features. I'm looking forward to the next version of Studiometry.

Andrew Shalat

To-do lists

Creating a to-do item, a report, and other information is easy. You can attach a to-do not only to a client file but also to a specific project – or to nothing at all. The progam's To Do feature does a good enough job to replace your handwritten notes.



ID	Clients
1111	Sample Client
1112	Macworld
1113	Final Countdown

ID	Project
1112-1112	Redesign

Thursday 19/2/04	Friday 20/2/04	Saturday 21/2/04	Sunday 22/2/04	Monday 23/2/04	Tuesday 24/2/04	Wednesday 25/2/04
Macworld redesign Wrok logo type						Redesign

Recurring Debt Name	Type	Recur Every	Recur Amount

Paid	Type	Date	Description	Amount
	Expense	19/2/04	Boozy lunch	425.96
	Expense	19/2/04	Slush fund	500.00
√	Expense	16/2/04	Backhanders	365.00
√	Expense	19/2/04	New G5	45000.00
	Hourly	19/2/04	New Debt/Credit	1080.00
√	Deposit	19/2/04	New Debt/Credit	-50000.00

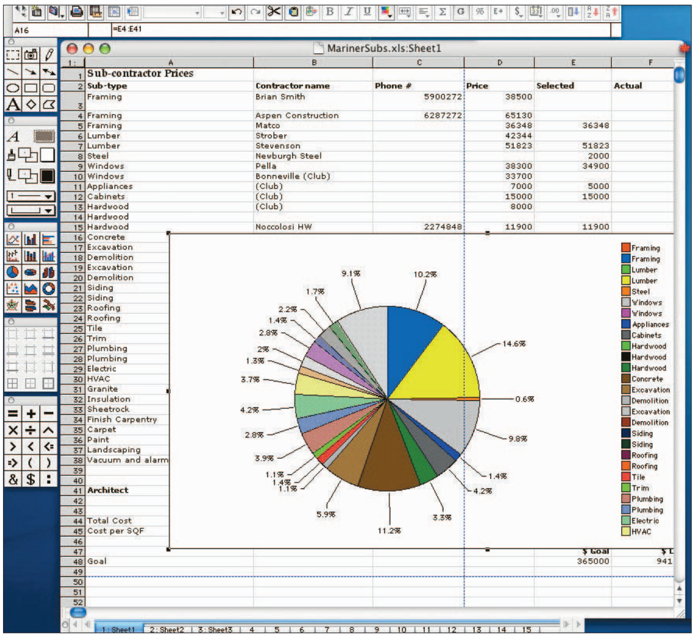
The word processor Mariner Write 3.5 and the spreadsheet program Mariner Calc 5.2 are designed to fill a niche somewhere between their counterparts in AppleWorks and the full-featured standards, Microsoft Word and Excel. Mariner Write is a great program that easily handles most Word documents and meets a wide variety of everyday text-editing needs. Mariner Calc works equally well as a standalone application. But both programs don't quite succeed when it comes to Office compatibility. (Mariner Write and Mariner Calc are available individually, or collectively in the MarinerPak bundle.)

Mariner Write 3.5

According to Mariner Software, Mariner Write contains – in a streamlined program – the 75 to 80 per cent of Microsoft Word features that are most important to the average user. As such, Write is a fine application. It has almost everything that most people need to create a variety of word-processing documents – from simple tools such as text formatting, an in-line spelling checker, and an 80,000-word dictionary and thesaurus, to advanced features such as paragraph styles, user-definable toolbars, footnotes, and integration with OS X's Services menu and AppleScript. Write can also save documents in several formats, including PDF, TXT, and Word and Mariner versions of RTF.

Write neatly handled nearly every Word document we threw at it, at least in terms of formatted text. The program interpreted a variety of Word's paragraph styles and footnotes – a capability that the similarly priced and focused Nisus Writer Express doesn't have. Write did have one peculiarity: its Style menu didn't recognize paragraph styles in imported documents. As a result, the menu always displayed No Style as the paragraph style. By contrast, AppleWorks can both interpret and recognize styles.

Write's performance when dealing with graphics embedded in documents left much to be desired. It couldn't display images placed in-line with text in files saved in Word. And if the image had text wrapped around it, Write displayed a file I/O error message and required a force-quit. Similarly, images saved in Write documents were missing when we opened those documents in Word. AppleWorks handles these issues, too, without a hitch.



A16 =E4 :E41

MarinerSubs.xls:Sheet1

1:	A	B	C	D	E	F
1	**Sub-contractor Prices**					
2	**Sub-type**	**Contractor name**	**Phone #**	**Price**	**Selected**	**Actual**
3	Framing	Brian Smith	5900272	38500		
4	Framing	Aspen Construction	6287272	65130		
5	Framing	Matco		36348	36348	
6	Lumber	Strober		42344		
7	Lumber	Stevenson		51823	51823	
8	Steel	Newburgh Steel			2000	
9	Windows	Pella		38300	34900	
10	Windows	Bonneville (Club)		33700		
11	Appliances	(Club)		7000	5000	
12	Cabinets	(Club)		15000	15000	
13	Hardwood	(Club)		8000		
14	Hardwood					
15	Hardwood	Noccolosi HW	2274848	11900	11900	
16	Concrete					
17	Excavation					
18	Demolition					
19	Excavation					
20	Demolition					
21	Siding					
22	Siding					
23	Roofing					
24	Roofing					
25	Tile					
26	Trim					
27	Plumbing					
28	Plumbing					
29	Electric					
30	HVAC					
31	Granite					
32	Insulation					
33	Sheetrock					
34	Finish Carpentry					
35	Carpet					
36	Paint					
37	Landscaping					
38	Vacuum and alarm					
39						
40						
41	**Architect**					
42						
43						
44	Total Cost					
45	Cost per SQF					
46						
47					**$ Goal**	**$ L**
48	Goal				365000	941
49						
50						
51						
52						

Half-way to Office

Both Mariner Calc and Mariner Write provide great features for people who don't need full compatibility with Microsoft Office.

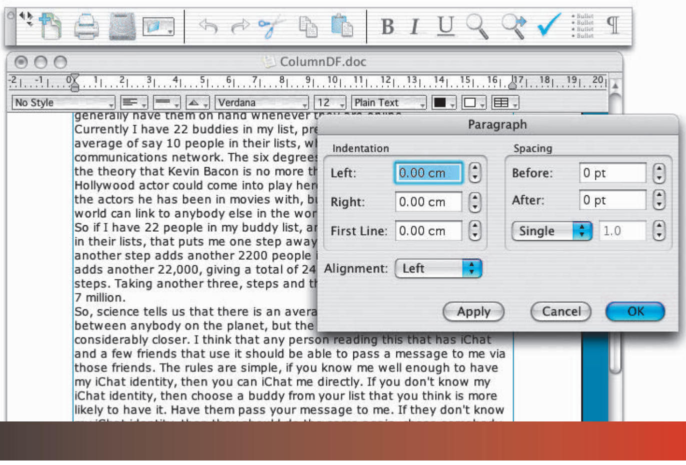
Mariner Calc 5.2

For people who need spreadsheet capabilities but not true integration with Microsoft Excel, Mariner Calc is an excellent alternative. With more than 140 built-in formulas, tabbed worksheets that can contain 32,000 by 32,000 cells, customizable toolbars, multiple undos, and graphing capabilities, Calc makes perfect sense for many basic spreadsheets.

Calc uses the same formula conventions as Excel; if you type =SUM(E3:E40)*0.1 in a cell, for example, Calc will display 10 per cent of the sum of cells E3 through E40. But because Calc doesn't ship with the templates or assistants you'll find in Excel and AppleWorks, you'll need to have a firm grip of formulae if you want to manipulate data in a complex manner.

Graphing in Calc works well, but it's a bit counterintuitive. In most spreadsheet programs, you select the range of rows and columns to go in a graph, then create the graph. In Calc, you can select only one column of data, from which Calc attempts to determine the legend information. This worked perfectly in spreadsheets that had graph information in neighbouring cells. But if the information is a few cells away, Calc uses its own naming conventions, which you must edit. If you attempt to select two columns of data, Calc gets confused and creates a blank graph.

Calc was particularly weak when opening Excel files. The program maintained many basic text formats such as bold and italic type, but it dropped number formats completely; we had to reinsert currency and decimal formatting after opening the Excel document. Also, if your spreadsheet includes any formulas Calc doesn't support, that information is lost completely. AppleWorks again had no problems converting any of the documents we tested.



ColumnDF.doc

generally have them on hand whenever t
Currently I have 22 buddies in my list, pre
average of say 10 people in their lists, wh
communications network. The six degrees
the theory that Kevin Bacon is no more th
Hollywood actor could come into play her
the actors he has been in movies with, bu
world can link to anybody else in the wor
So if I have 22 people in my buddy list, ar
in their lists, that puts me one step away
another step adds another 2200 people i
adds another 22,000, giving a total of 24
steps. Taking another three, steps and th
7 million.
So, science tells us that there is an avera
between anybody on the planet, but the
considerably closer. I think that any person reading this that has iChat
and a few friends that use it should be able to pass a message to me via
those friends. The rules are simple, if you know me well enough to have
my iChat identity, then you can iChat me directly. If you don't know my
iChat identity, then choose a buddy from your list that you think is more
likely to have it. Have them pass your message to me. If they don't know

Paragraph

Indentation
Left: 0.00 cm
Right: 0.00 cm
First Line: 0.00 cm

Spacing
Before: 0 pt
After: 0 pt
Single 1.0

Alignment: Left

Macworld's buying advice

As standalone programs that provide the features most users actually need, without the powerful (and expensive) features in Microsoft Word and Excel, both Mariner Write 3.5 and Mariner Calc 5.2 perform perfectly. They can ably handle most day-to-day word-processing and spreadsheet tasks.

But when viewed from the perspective of interoperability with Word and Excel, Write and Calc are overshadowed by the more feature-rich and considerably less expensive AppleWorks.

Jeffery Battersby

MS Office rivals

Publisher: Mariner Software
www.marinersoftware.com

Mariner Write 3.5

Pros: Excellent word-processing abilities; easily translates most Word documents; customizable toolbars.
Cons: Paragraph-style translation has minor quirks; poor handling of embedded graphics in Word documents.
Min specs: PowerPC; Mac OS 8.6/Mac OS X.
Price: $70; upgrade, $25; as part of MarinerPak, $130.
Star Rating: ★★★/6.7

Mariner Calc 5.2

Pros: Same formula conventions as Excel; multiple undos; tabbed worksheets; customizable toolbars.
Cons: No templates for complex calculations; limited capability for opening Excel documents; handles only basic Excel cell formats.
Min specs: PowerPC; Mac OS 9/Mac OS X.
Price: $70; upgrade, $25; as part of MarinerPak, $130.
Star Rating: ★★★/6.4

Those looking for a totally tubular extreme sports challenge but who are burned out on Tony Hawk's Pro Skater series should look at Aspyr Media's Kelly Slater's Pro Surfer – an alternative that will let you use some of the same skills in a very different setting: the waves.

Pro surfer Kelly Slater is a Mac user in his own right. He was featured in early Switcher ads showing off video footage he'd edited with his Mac. But until recently, if you wanted to play his game, you had to buy a video-game console. Now Aspyr has brought the surfboarding action to the Mac.

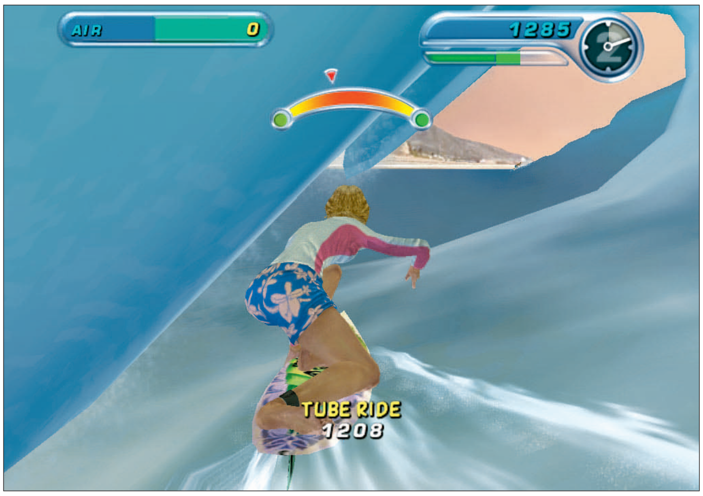
The trappings of Kelly Slater's Pro Surfer will seem familiar to anyone who's played Tony Hawk. The trick engine is similar; it has a career mode, in which you unlock new areas by achieving goals; and you can pick an identity from a variety of real-world pro surfers. In fact, the actual mechanics of surfing are not unlike those of riding a half-pipe in Tony Hawk.

While riding waves, you try to string together as many tricks as possible to earn ever-higher combination scores. A trick meter gauges the success of your sequences. Once you've maxed out the meter, you'll be able to pull off mad tricks that wouldn't otherwise be possible.

The game's graphics are fantastic. In fact, they're better than what I've seen in the console versions – water effects are detailed and lifelike, with beautiful particle and translucency effects that really bring the game to life.

However, as with many games that have console pedigrees, you'll find it more satisfying to play on a game pad than on the keyboard, which I found cramped, lousily configured, and uncomfortable to use. The soundtrack is also good, evoking the mood of hanging out at the beach and trying to catch that perfect wave.

Kelly Slater's Pro Surfer doesn't offer Internet-based competition, which is probably just as well, as I've had little success with Tony Hawk's online modes. Aspyr advises Panther users to download a Pro Surfer patch (available from the company's Web site), which fixes problems specific to that operating system.



Gnarly – to the max!
As a champion surfer in Kelly Slater's Pro Surfer, you score points by combining tricks.

Macworld's buying advice

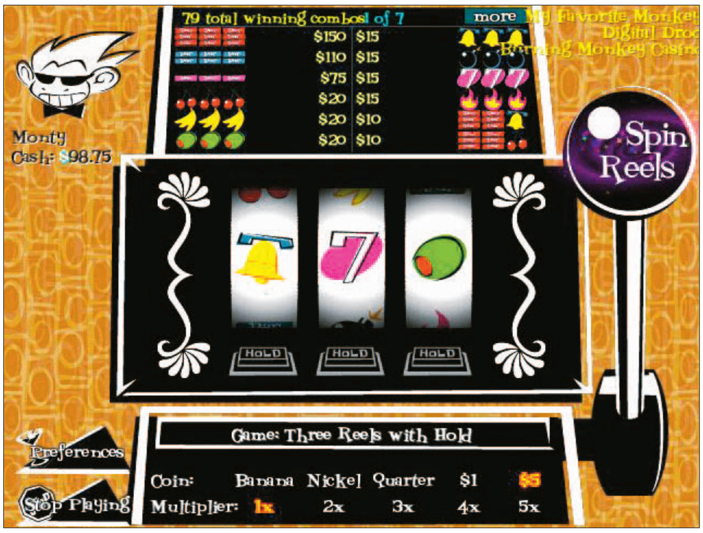
Fans of Tony Hawk's game franchise won't find a ton of surprises here. Still, Kelly Slater's Pro Surfer is well executed and fun.

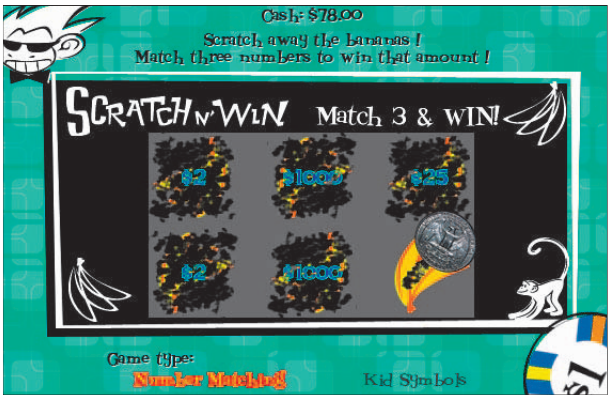
Peter Cohen

Hang ten, dude

Kelly Slater's Pro Surfer

Publisher: Aspyr www.aspyr.com
Distributor: Softline, 01293 827 900
Pros: Beautiful graphics; easy-to-grasp fundamentals.
Cons: May seem repetitive to Tony Hawk players; requires a game controller for optimal performance.
Min specs: G4 700MHz; Mac OS X 10.1.2; 256MB RAM; 520MB hard-drive space, 32MB VRAM.
Price: £34.99 (including VAT).
Star Rating: ★★★★/8.1





Freeverse Software is one of my favourite independent Mac game developers, partly because it has an irreverent streak that imbues every game with a healthy sense of humour. Nowhere is this more evident than in its Burning Monkey series.

In the newest addition, Burning Monkey Casino, Las Vegas gets the smouldering-simian treatment. The collection includes five games: Slots, Three Card Monty, Poker, Scratch 'N' Win, and Black Jack. Each game is customizable – even Three Card Monty (the classic card-shuffling game made famous by street hustlers). A stand-up comic (doing the worst impression of Henny Youngman I've ever heard) pops up every few minutes to interject one-liners. Thankfully, you can shut him off if he becomes unbearable.

The entire Burning Monkey Casino collection is brimming with Freeverse's trademark humour and high production values. It comes with a great soundtrack that evokes Vegas lounge acts. In fact, it even offers a separate lounge-act feature in which a gorilla serenades you. Each game features animated backgrounds and special effects that will make you feel as though you've been transported to a casino in Vegas or Atlantic City, circa 1959.

And if you find you've bet the farm and can't cover your debts, the Borrow Money button is only a click away. (I wish it were that easy in real life!)

Macworld's buying advice

Burning Monkey Casino offers cute, lighthearted fun for players looking for some quick and dirty Vegas-style action.

Peter Cohen

Risk-free lonesharking

Burning Monkey Casino

Publisher: Freeverse Software www.freeverse.com
Pros: Great production quality; game variations keep play challenging.
Cons: Slim choice of games.
Min specs: Mac OS X.
Price: $20 online.
Star Rating: ★★★★/8.4

Model behaviour

As well as the obvious benefits of stability, functionality and appearance, the introduction of Mac OS X back in 1999 had one major side-effect that made a lot of creative professionals extremely happy. For the first time in its history, the Macintosh operating system was seen as a viable platform for 3D software: not the weedy, feature-starved, memory hogging type of 3D software that had populated our hard drives throughout the 1990s, but full-on, bona fide professional packages capable of producing results that rivalled dedicated work-stations.

This is not to suggest that 3D software developers had neglected the Macintosh platform prior to OS X. Indeed, over the years there have been many fine and worthy 3D packages that helped Macintosh beginners to cut their 3D teeth before inevitably moving off into the PC world in search of greater firepower. These included entry-level software such as the very easy-to-learn Infini-D and the often temperamental Strata Studio Pro; and more powerful 3D packages such as Form•Z, Electric Image, LightWave and Cinema 4D.

Generally speaking, however, the Macintosh platform in pre-OS X times was stymied by a number of factors: the lack of true multi-threading, small market share and – let's be honest about this – the operating system's intrinsic inability to cope with the heavy demands of creating and rendering complex 3D scenes. I, for one, still have nightmares that are inhabited by stuttering top-of-the-range (for the time) Quadras that sit on my desk with smoke billowing from them while they take months to render an image that would have taken only hours to complete on a PC.

Thankfully, the 3D climate has changed considerably in recent years. Although – as Windows users are fond of boasting – you won't find programs such as 3DS Max or Rhino on a Macintosh, there are a number of packages available that equal or even, in many respects, better these flagship PC applications. What this means is that things have never been healthier for the 3D designer who prefers to work on a Macintosh.

From entry-level all the way up to professional level packages, there's literally something for everyone. Indeed, nowadays there's such a wealth of 3D software available that it's beginning to get a little difficult to decide upon a package that's appropriate to your needs.

Choosing 3D software that does that exactly what you want it to do is made even more confusing because at face value, most packages seem to have more or less the same feature set. You'd be hard-pressed, for example, to find even entry-level software that doesn't include NURBS, once a major selling point in the 3D community. Likewise, most 3D packages routinely include features such animation, Radiosity, inverse kinematics, particle systems, physics, vector output and metaball modelling.

For the uninitiated, however, much of the above will probably sound like something from an old episode of Blake's 7. For this reason one of the most important considerations when purchasing 3D software is quality of documentation. Quite simply, it's no use having all this power at your fingertips if you're unable to learn how to use it in a manner that that doesn't involve gnashing of teeth and rapid hair-loss.

In researching this feature, Macworld examined and tested every major 3D package available for the Mac. All of them, of course, have strengths and weaknesses. Many of the cheaper, entry-level packages, for example, offer an easy-to-understand toolset but lack the extra functionality of their pricier cousins. Conversely, more feature-laden

The Mac's no longer on the sidelines when it comes to 3D. By Ian Probert

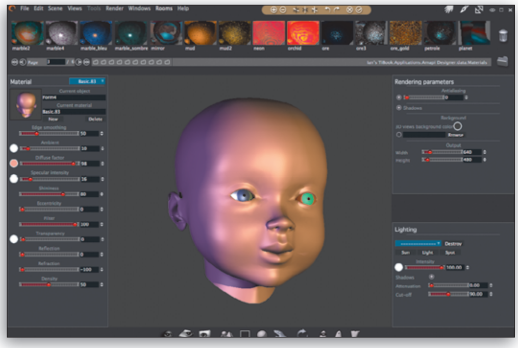
packages such as Maya and LightWave produce broadcast quality animations but have dauntingly steep learning curves. It goes without saying, therefore, that if all you want from your 3D software is the ability to render logos and shine a few lights on them, you should be looking towards the lower end of the market.

In truth, all of the software featured here offers a range of features that one could only have dreamed of in pre-OS X days. When deciding which one is for you, however, it all boils down to the following: What do you want to use the software for? Does the program's documentation and/or support help or hinder your ability to get up and running? Is your computer powerful enough to run the software (because as sure as eggs are elongated 3D spheres, you'll need a lot more processing power than the stated minimum requirements if you want to create any models or scenes that are remotely complex)? And finally, are you more interested in functionality or style? As you will see, the range of software covered here sport interfaces that vary from the austere to the downright zany.

Amapi Designer 7.1

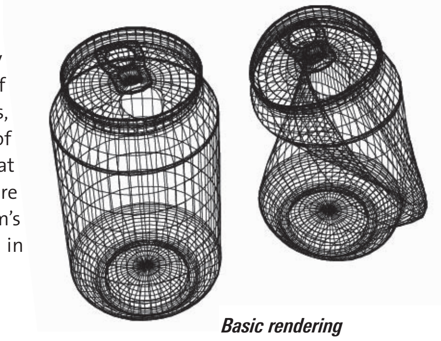
A leading contender for the wackiest interface on show here, Amapi Designer also happens to be one of the easiest to learn. That is, if you're prepared to accept that you're going to be doing things in a very different way to most 3D packages. Like many 3D packages, Amapi features a room-based interface; in other words, individual workspaces are allocated to different parts of the program. In Amapi's case there are three such rooms: the Modelling Room, in which 3D models are created; the Rendering Room, which contains simple controls for outputting high-quality images; and the Catalog Room, in which you can store and retrieve Amapi documents.

Amapi is a curious beast. On the one hand, its idiosyncratic toolset is far easier to come to terms with than you might imagine. On the other, its documentation is less than ideal – the package ships with 500 free models, a 74-page printed manual (Amapi supporters claim that this is all the manual you will ever need), and a dual-language pdf manual with the chapters on rendering and Preferences available only in French. That said, Amapi does compensate for this omission by offering a surprisingly versatile range of modelling features such as NURBs, dynamic geometry and dozens of polygon tools. Indeed, modelling is what Amapi really excels at – as such, there are no animation features and the program's rendering capabilities are limited in comparison to others.



Judgment call

Upon launch Amapi takes over the OS X interface – something you'll either love or hate.



Basic rendering

Like many 3D programs, Amapi can export models as editable vector graphics in Adobe Illustrator 3 format. Here the program did a creditable job of exporting these cans.

Verdict: Amapi

An excellent standalone modelling package – but to get the best results you'll probably need to use it with an alternative rendering package.

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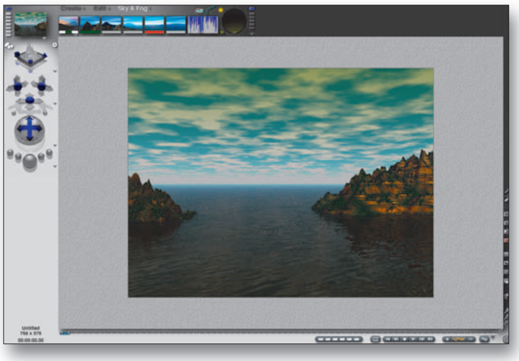


Playing God
In Bryce the world is your 3D oyster.

Bryce 3D 5.0

Although Bryce 3D is no longer supported on the Mac (you can, however, purchase it for Windows at the incredibly low price of £64 excluding VAT), it's still worthy of a mention here. For starters, the program works flawlessly with OS 10.3 and with a little luck you may be able to pick up a bargain copy on eBay.

Bryce is a dedicated 3D terrain generator with which you can create worlds, fill them with mountains, deserts, oceans and plant life, control the environment and then render the results with breathtaking quality. It is a pity that Corel, who acquired Bryce following the dissolution of Metacreations, decided to dump this object of beauty. But then it's fairly easy to understand why. The abiding problem with Bryce was that, despite all its excellent features, there was always the question of what to do with the beautifully rendered landscape once you'd finished with it. The answer is probably to post it on one of the many Bryce user galleries that that still litter the Internet. As a working tool, then, Bryce was always going to have its limitations. If you take the program as face value, however – as a means of letting your imagination take flight – it has very few peers. However, see Reviews, page 48 (Artmatic Voyager).

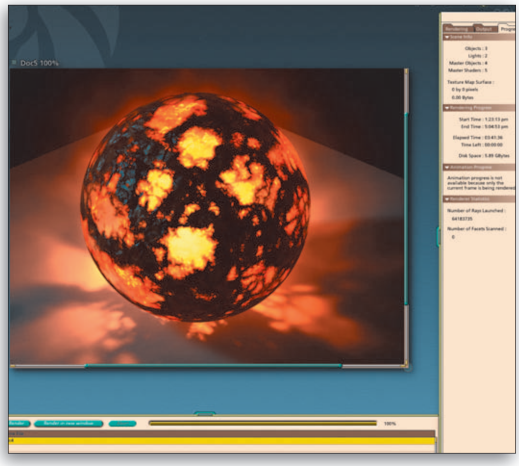
Verdict: Bryce

Creates fantastic 3D landscapes and has animation capabilities. It may, however, be difficult to persuade your

3D software compared

Software	Developer	Distributor	Web site	Price (excluding VAT)	Documentation	Registration method	Animation	(HDRI)	Min. system requirements
Amapi Designer 7.1	Eovia	Computer Warehouse	www.eovia.com	£359	Printed Getting Started guide and PDF	Serial number	X	X	OS 9, OS X; G3 600MHz; 128MB RAM; 100MB hard-drive space.
Amorphium 3.0	Electric Image	Computers Unlimited	www.electricimage.com	£295	Printed and PDF manual	Serial number	✓	X	OS 9, OS X; 233MHz G3; 128MB RAM; 150MB hard-drive space.
Bryce 3D 4.0	Corel	Computers Unlimited	www.corel.com	No Mac version available for latest version, 5.0	PDF manual	Serial number	✓	X	OS 8.6, OS X; 128MB RAM; G3 100MB hard-drive space.
Carrara 3.0.3	Eovia	Computer Warehouse	www.eovia.com	£249	Excellent printed manual	Serial number	✓	✓	OS 8.1, OS X 10.1; G3 266MHz; 128MB RAM; 300MB hard-drive space.
Cinema R8.5	Maxon	Computers Unlimited	www.maxon.net	Cinema 4D R8.5: £424.68. Cinema 4D R8.5 Bundle: £1,449 R8.5 Studio Bundle: £2,159.00	Excellent printed manuals for application and modules, plus PDF	Serial number 253MB hard-drive space.	✓	✓	OS 9, OS X; G3; 512MB RAM;
Formz 4.1	Auto-des-sys	Computers Unlimited	www.autodessys.com	£1,055	Six printed manuals and PDF manuals	Dongle/serial numbers	✓	X	OS 8.6, OS X 10.1; G3; 256MB RAM; 200MB hard-drive space.
Lightwave 7.5	NewTec	Computers Unlimited	www.newtek-europe.com	£1,100	Excellent printed manual	Dongle/serial/ product lock	✓	✓	OS 9, OS X; G3; 128MB RAM; 32MB hard-drive space.
Maya Complete 5.0.1	Alias	www.alias.com	www.alias.com	£1,449	Instructional DVD and PDF	Activation key	✓	✓	OS X; 512MB RAM; 450MB hard-drive space; 3-button mouse.
Pixels 3D 5.0	Pixels Digital	www.pixels3d.com	www.pixels3d.com	$399 online	PDF manual	Serial number	✓	X	OS X; G3; 27MB hard-drive space.
Poser 5.0	Curious Labs	Computers Unlimited	www.curiouslabs.com	£299	Printed and PDF manual	Serial number	✓	X	OS X 10.2; 500MHz G3; 256MB RAM; 500MB hard-drive space; Internet connection.
Studio 3DPro 3.9	Strata	www.strata.com	www.strata.com	$695	Printed and PDF manual	Serial number	✓	X	OS 9, OS X; G3; 256MB RAM; 125MB hard-drive space.
Swift 3D	Electric Rain	www.swift3d.com	www.swift3d.com	$169	PDF manual	Serial number	✓	X	OS 8.1, OS X; G3; 64MB RAM; 20MB hard-drive space.
Universe 5.0	Electric Image	Computers Unlimited	www.electricimage.com	£999	Printed and PDF manual	Activation code	✓	X	OS 9, OS X; 300MHz G3; 512MB RAM; 120MB hard-drive space.
Vue 4.0 Professional	E-on Software	e-onsoftware.com	www.e-onsoftware.com	£119	Printed manual and PDF	Serial number	✓	X	OS X 10.2; 512MB RAM; 250MB hard-drive space.

Macworld.co.uk Search Macworld's Reviews database online (**www.macworld.co.uk**), updated throughout the month



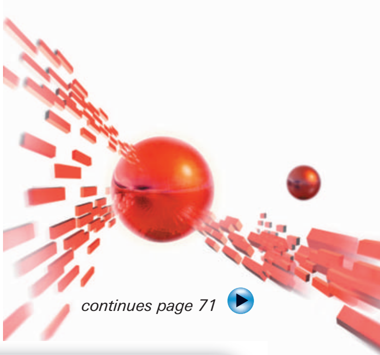
employer that its purchase would greatly increase company profits. Shop around, and try to pick up a cheap copy of version 4.0 for home use if you can.

Carrara Studio 3.0.3

Like the eccentric Amapi Designer, Carrara Studio is the product of French software developer Eovia. As such, it sports a similar, shall we say, unique interface. Don't be put off by this, however, because at the heart of Carrara lie two of the Mac's 3D mainstays: Infini-D and Ray Dream Designer.

In OS 9 days, these two programs provided a painless introduction to the world of 3D. They were both incredibly easy to use but offered a limited feature set. With an interface designed by Kai Krause (of KPT fame) the best of the two programs' features have been combined to form Carrara. And the results are outstanding.

Advanced rendering
Carrara Studio's rendering engine compares very favourably with more-expensive packages.



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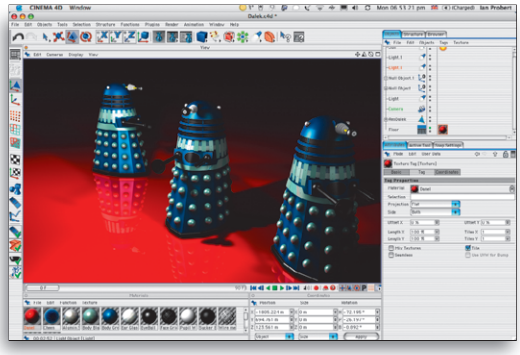
Particle systems	Physics	Key import file types	Key export file types	Plug-in support	Key rendering engines	Network rendering	Cross compatibility	Score
X	X	3DS, Wavefront Obj VRML, STL, IGES, DXF, Open Inventor, Illustrator 3.0	3d Studio, Wavefront Obj; VRML 1/97; STL; IGES DXF; Open Inventor; Illustrator 3.0; Carrara Studio 2.0	X	Raytracing	X	✓	7.1
X	X	3Ds, DXF, FACT, LWO, Wavefont Obj, Illustrator 8.0	QuickTime, PICT, GIF, BMP, Electric Image, PNG, Targa, TIFF, SWF	✓	Raytracing	X	X	6.8
X	X	BMP, Metafile, GIF, Jpeg, PSD, Targa, TIFF, PICT	HTML, Photoshop 3.0 TIFF, PICT, Quicktime VR, 3D Studio DXF, Direct 3D, Infini-D, Lightwave, Metastream, PGM, Ray Dream Studio, Rayshade, Truespace, DEM, Videoscape, RML, Wavefront Obj, Worldtoolkit.	X	Raytracing	✓	✓	7.3
✓	✓	Adobe Photoshop 2.5, PICT, GIF, JPEG, TIFF, Targa, QuickTime, Avi, 3DMF, VRML, Wavefront Obj, DXF, 3DS	Adobe Photoshop 2.5, PICT, GIF, JPEG, TIFF, Targa, QuickTime Avi, 3DMF, VRML, Wavefront Obj, DXF, 3DS	✓	Raytracing, caustics	✓	✓	7.3
✓	✓	3Ds, DEM, DXF, Illustrator, LWO, QuickDraw 3D, VRML, Wavefront Obj, Tiff, PICT, Jpeg, BMP, IFF, PSD	3Ds, Direct3D, DXF, QuickDraw 3D, Shockwave 3D, STL, UZR, VRML, Wavefront Obj, TIFF, Targa, BMP, PICT, IFF, JPEG, RLA, RPF, PSD, QuickTime, QTVR, After Effects	✓	Raytracing, radiosity, caustics, multi-pass	✓	✓	9.4
X	X	Art•Lantis, DEM, DWG,DXF FACT, IGES, Lightscape, LWO, Wavefront Obj, STL, VRML, 3DGF, 3DMF, 3DS, BMP, llustrator, Jpeg, Metafile, PICT, PNG, QuickTime image, Targa, TiFF, WMF	Art•Lantis, DEM, DWG, DXF, FACT, IGES, Lightscape, LWO, Wavefront Obj STL, VRML, 3DGF, 3DMF, 3DS, RIB, Shockwave, W3D, VET, BMP Illustrator, JPEG, Metafile, PICT, PNG, QuickTime image, Targa, TIFF, WMF	✓	Shaded rendering, hidden line, RadioZity	✓	✓	9.3
✓	✓	Alias, Bmp, .cin,Flic, .F), IFF, Jpeg, Pcx), Pict, Pixar, Qrt, Raw, Rendition, Sgi (.rgb), Softimage, Sunraster, Targa, Tiff, Wavefront Obj, X windows, uv, 3DS, VRML, DXF	Alias, BMP, Cineon, IFF, JPEG, Pcx, Pict, Pixar(.pxr), Qrt (.qrt), Raw, Rendition, Sgi, Sunraster, Toaster, Targa_24, TIFF, Wavefront OBJ X windows, Yuv, StoryBoard, FLIC, AVI, QuickTime	✓	Raytracing, radiosity, caustics, HyperVoxels, depth-of-field filter	✓	✓	9.4
✓	✓	mayaAscii, mayaBinary, mel, DWG, DXF, OBJ (.mtl), IGES, aliasWire (StudioTools), aiff, image, RIB, mov (ascii motion) VRML2	Geometry: aliasWire (StudioTools), IGES, DWG, DXF, OBJ, VRML2, mayaAscii, mayaBinary, mel, mov, GE2, RTG, OpenFlight, Macromedia Flash, Adobe Illustrator, Shockwave, IFF, AVI, QuickTime, GIF, Softimage Wavefront RLA, BMP TIFF, SGI RGB, Alias PIX, JPEG, EPS, Cineon, Quantel, Targa	✓	IPR (Interactive Photorealistic Rendering) raytracing, attach external render to program	✓	✓	9.5
✓	✓	Wavefront Obj, LWO, 3DS, RIB, DXF	Wavefront Obj, LWO, 3DS, RIB, DXF	X	Raytracing	X	X	7.1
X	✓	QuickTime, BVH, 3DS QuickDraw 3DMF, DXF, LWO, Wavefront Obj	Viewpoint, RIB, BVH, Painter script, QuickDraw 3DMF, DXF, LWO, VRML HAnim, Wavefront Obj	✓	Raytracing, sketch-style render	X	✓	8.2
X	X	3DS, 3dMesh, Amapi, BMP, DXF, EPS, IGES, Jpeg, MiniCad, Pict, Picture resource, QuickTime SHM, TIFF, Targa, VRML	Amapi, BMP, DXF, JPEG, SWF, PICT QuickTime, Swift 3D, TIFF, Targa, VRML	✓	Raytracing, toon, RayDiosity, scanline	X	X	7.2
X	X	3DS, Adobe Illustrator, EPS, DXF, Jpeg, TIFF, BMP, PICT	SWF, EPS, SVG, Adobe Illustrator, Targa, BMP, JPEG, PNG, TIFF	X	RaVix, EMO	X	X	7.1
✓	✓	SAT, SAB, FACT, IGES, EPS	FACT, STL, Wavefront Obj, QuickTime, PICT, Planar Z-depth, Spherical Z-Depth	✓	Raytracing, radiosity	✓	✓	9.2
X	X	3Ds, COB,DEM, DXF, LWO, Obj, PZ3, RAW, PICT, BMP, GIF, PSD, JPG, PNG, PCX, RLA, RPF	DXF, Wavefront Obj, 3Ds, LWO, SHD, C4D, COB, QuickTime, QTVR, AVI, RealMovie, MPEG.	✓	Raytracing	✓	✓	7.8

Note: Products are given scores based on the program's own merits – not relative to other applications in the roundup.



Exterminate!

Cinema 4D excels at modelling antique robotic pepper pots.

With its room-based metaphor, Carrara has a toolset that really is incredible value for money. As well as all the standard modelling tools that you'd expect, Carrara boasts high-end features such as support for High Dynamic Range Images (HRDI) can really boost the quality of renders. As well as this, it includes well-implemented animation capabilities with support for inverse kinematics.

Carrara also includes an excellent printed manual and, with scene wizards that automatically build fully lit 3D scenes for you, is ideal for the novice or intermediate 3D designer who needs access to high-end features at a low-end price.

Verdict: Carrara

You may find Carrara's unusual interface a little off-putting. But persevere – this program combines ease of use with surprising raw power.

Cinema 4D XL

Cinema 4D began life way back in 1993 on the Amiga and was ported to the Macintosh and Windows platforms three years later, drawing much critical acclaim in the process. Since then, the program has improved with every new release to become one of the leading lights in the Macintosh 3D-software world.

The program is modular: the interface is split into separate components dealing with different aspects of the 3D experience. What this means is that, as well as being able to customize practically every part of the interface, you can also choose to purchase only those parts of the program that are of interest to you (developers Maxon currently offer three separate bundles with varying degrees of functionality and price).

Of all the packages on test here, Cinema 4D is, in my opinion, by far the easiest to learn. It doesn't have scene wizards like Carrara Studio but you'll never really need them. In Cinema 4D you can be rendering out professional-looking images and animations within hours. It also helps that the program has one of the fastest rendering engines.

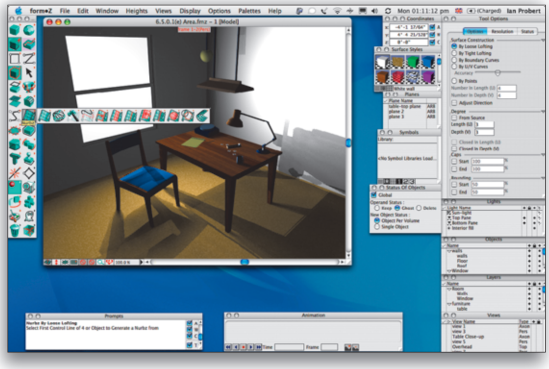
Once you've learned the basics of modelling and rendering in Cinema 4D, you may want to open your wallet and look at the more sophisticated modules available for the program. These include: BodyPaint 3D, a vector-based paint tool that can generate pin-point accurate texture maps; Dynamics, a stylish physics engine; PyroCluster, used for creating realistic smoke and fire effects; and MOCCA, an accomplished character-animation tool.

Verdict: Cinema 4D

One of the best 3D packages available for the Mac. Easy to use but incredibly powerful (it's been used in many Hollywood movies, including Ridley Scott's Gladiator), Cinema 4D's price may put off all but the professional.

Form•Z 4.0

Just one look (or should I say *feel*?) at the packaging that form•Z 4.0 comes in makes it clear that you're dealing with a heavy duty piece of 3D kit. form•Z ships with no less than six manuals that weight 9lbs in total – in other words, three-times Vanessa Feltz's weekly target in Celebrity Fit Club – and you're going to need all this documentation because form•Z is in no way intended for the novice.



Raise the roof

Form•Z excels at creating architectural design. If your computer is up to it, fully shaded models can be displayed in the browser's RenderZone mode.

Auto•des•sys, the developer of form•Z, markets its product as a '3D Form Synthesizer'. What the software is, however, is an extremely powerful modelling and rendering tool that is well-suited to architectural and product design.

Form•Z's feature set is extensive, verging on overwhelming. As well as standard features such as animation, sketch render mode, network rendering and NURBS (rebranded as 'Nurbz'), the program comes equipped with a wide variety of tools that can create accurate multipatch surfaces that are ideal for modelling objects such as car bodies. Understanding the potential of many of these tools can be a daunting process, but the end results are more than worth it. Despite its steep learning curve, form•Z ranks among the very best that the Mac has to offer.

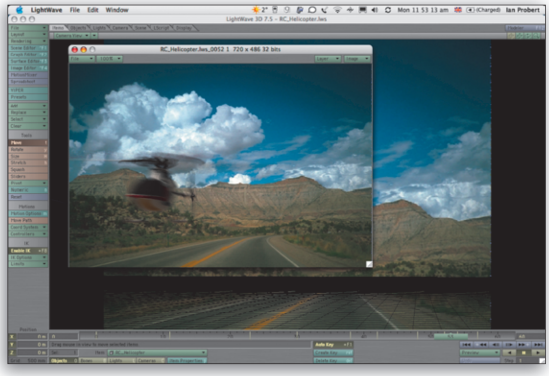
Verdict: Form•Z

If it's modelling power you're after, form•Z 4.0 offers a level of close control that can't be matched by other packages. Getting to grips with all this power will, however, require many long nights.

LightWave 7.5

Over the years it seems that LightWave has been locked in a continual battle with Cinema 4D. The two programs have both taken turns to introduce new features and waited then for the other to catch up. So, who's in the lead at the moment? The answer to this question depends very much on how you intend to use the software.

As is to be expected for a product of this price, LightWave has a feature set to rival the best. The package – which is separated into four separate programs (LightWave, LWSN, Hub, Modeler, and Hub) – includes almost any type of modelling and animation tool that you can think of.



The sky's the limit

LightWave excels at creating broadcast-quality animations.

Where it stands out from the rest, however, is with features such as its unique model format 'IntelligEntities', which takes a channel-based approach to deforming entities that simplifies animated effects such as facial expressions.

LightWave also differs from its rivals in its use of a spreadsheet scene manager. This lets users adjust values for multiple objects in one go. Although LightWave excels at modelling and rendering still images, it's clear that the program is increasingly aiming itself towards the high-end animator. Its use in movies such as Jurassic Park, Jimmy Neutron and The Matrix Reloaded would seem to support this notion.

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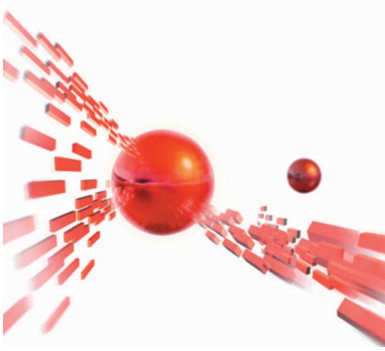
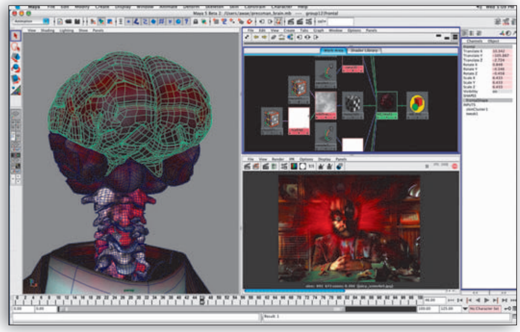




Heavy hitter

Maya places tremendous power at your fingertips in an interface that's easy to understand.

Verdict: LightWave

A heavyweight package with a fast renderer and advanced modelling features. LightWave really comes into its own when you explore its animation capabilities.

Maya Complete 5.0

It's no understatement at all to say that the release of Maya 3.5 for OS X in 2000 was one of the most important events in Mac 3D history. In one fell swoop, the program immediately raised the benchmark of 3D software to a completely new level. This was followed in 2001 by a price cut of almost £3,500 that made the program's advanced features available to the man in the street. Many of Maya's competitors are only just beginning to catch up with what the program has to offer.

Even if you've never used Maya, you're certain to have seen it in action in movies such as Star Wars: The Phantom Menace, Spiderman and Peter Jackson's Lord Of The Rings Trilogy. Quite simply, the Oscar-winning Maya offers arguably the most flexible and sophisticated animation toolset available on the Mac. And its capabilities aren't just limited to movie making: the program excels at game design and broadcast graphics. As well as this, Maya is no slouch when it comes to producing still images.

The interface is, of course, fully customizable. The program is another with a room-based interface: Animation, Modelling, Dynamics and Rendering. Select any of these menu options and the program's interface changes to reflect this. Maya's feature set is vast. As well as all the standard modelling tools, the program has features for creating effects such as realistic flowing liquids (as seen in James Cameron's The Abyss) and you can use its advanced paint-effects systems to literally paint complicated crowd scenes.

Maya ships without a paper manual but includes an excellent DVD Beginner's Guide that walks you through the basics (you can also purchase other tutorial DVDs). As is to be expected, the program has a steep learning curve – but with patience you can create, render and animate almost anything you like.

Verdict: Maya

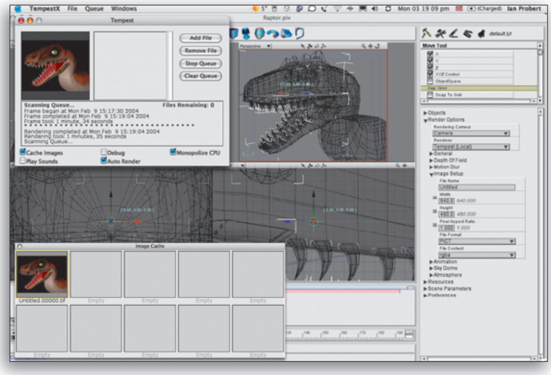
Serious power at a knockdown price. If Maya isn't the best that you can get, it's as near as dammit. Be prepared, however, to spend a lot of time learning this program.

Pixels 3D 5.0

Pixels 3D 5.0 is about as straightforward an entry-level 3D package as you can get. Competitively priced, and with a full feature set, the program is ideal for beginners who want to try 3D design without paying through the nose. This is not to say that the program is a lightweight; indeed, with a little effort you can achieve results that are barely distinguishable from the bigger boys.

Like most of the packages featured here, Pixels 3D includes robust NURBS features, as well as animation, atmospheric effects, morphable polygons and even dynamic water simulation.

While Pixels 3D doesn't break any new ground, it does what it's supposed to do very well. If you find yourself distracted by the off-the-wall interfaces of Carrara Studio and Amapi, this package is a decent alternative.

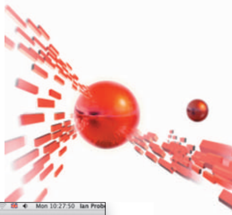


Born in a Tempest

Pixels 3D ships with Tempest, a separate rendering program that produces excellent results.

Verdict: Pixels 3D

Doesn't have the overwhelming feature set of the big boys but is nevertheless a solid modelling and animation package. Ideal for the beginner who wishes to learn the basics without being dazzled by eye candy.

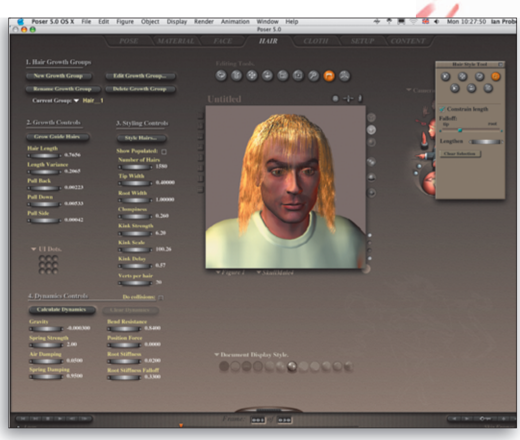


Poser 5.0

Poser isn't your traditional 3D package. For starters, there are none of the standard tools that we associate with 3D programs, such as cube or spherical primitives. Nor does the program offer NURBS, particle systems or the ability to extrude, revolve or skin objects. What Poser really excels at is creating realistic 3D human beings and then rendering or animating them.

Creating people is a cinch in Poser: simply choose a figure from one of dozens of models available, dress him or her from a selection of clothing, select a suitable pose from one of hundreds and click the render button. It really couldn't get much simpler than this.

For those who want to go a stage or three further, however, the program can get surprisingly complex. The Hair Room, for example, provides sophisticated controls for embellishing models with practically any hairstyle. Similarly, in the cloth room you can choose to drape realistic cloth over models and have the folds conform to gravity. You can also choose to morph any part of a model into any object you have created in another 3D package; there are sketch render modes, you can import BVH motion files and assign realistic motion to your models, and you export fully-textured models in a variety of formats for use in other 3D programs.



Break like the wind

Poser's Hair Room is excellent for creating Spiñal Tap-style David St Hubbins lookalikes.

Verdict: Poser

For creating 3D models of people, Poser has no peer. Excellent when operating in tandem with another 3D package.

Strata 3Dpro

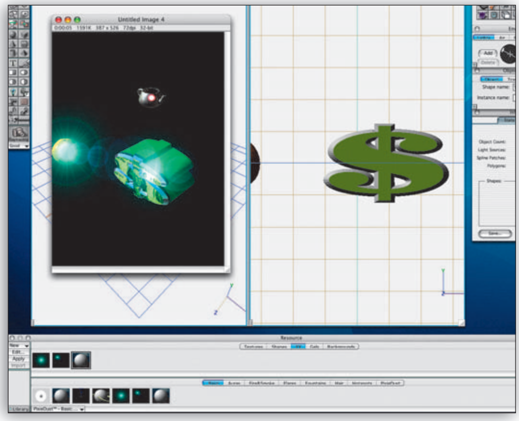
In essence, Strata 3Dpro has changed very little from previous incarnations that were available back in System 7.5 days, when it was known as Strata Studio Pro. Thankfully, one major

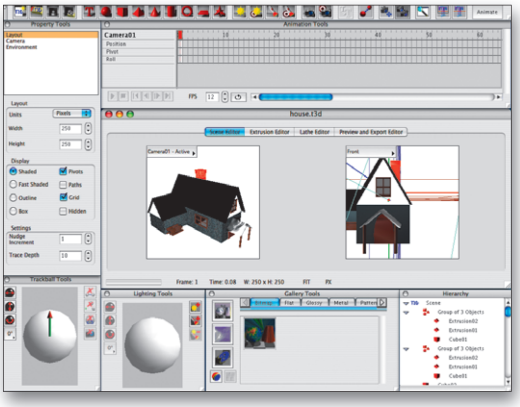
continues page 74

Adobe
Illustrator CS
Strata 3Dpro 3.9
Combustion 3.0.1
Stitcher 4
Faster Find

Familiar ground

Old-time 3D designers will be familiar with the look of Strata 3Dpro.





Ease of use

Swift 3D offers straightforward controls for exporting models to raster and Flash formats.

improvement is stability. In the old days, Strata had a nasty habit of crashing at crucial moments – the program is far more robust nowadays.

Strata 3Dpro nicely bridges the gap between entry-level 3D software and the more-advanced packages such as Cinema 4D and LightWave. As such, it has an enormous feature set that will keep novices and experienced 3D designers busy for some time. Features include all the standards: splines, skinning, lathing, sweeping and inverse kinematics. It also offers animated hair, metaball modelling, particle systems, fire and smoke, and includes four render modes.

On the minus side, it has to be said that the interface is looking a little jaded these days. The program also tends to slow down when handling large scenes.

Verdict: Strata 3D Pro

This may be something of an old-timer, but as a piece of intermediate 3D software there's still plenty of power.

Swift 3D

Along with Pixels 3D, this program is one of the easiest-to-understand 3D packages available. Its feature set is ideal for the beginner, offering surprisingly powerful modelling, animation and texturing tools without bothering to complicate matters with features such as NURBS, physics and particle systems.

Much of the reason for this lack of complexity is because Swift 3D is pitched squarely at Web designers who wish to include 3D animations in their Macromedia Flash sites. As such, the program offers extensive support for Flash, and excels at creating vector-based artwork.

The latest version of Swift 3D now includes support for raster rendering, which means that you can now save images as TIFF, JPG, BMP, PNG and Targa files

Verdict: Swift 3D

A simple and straightforward introduction to 3D design that's aimed at Flash users. Once you've mastered its toolset, however, you may be forced to look around for more-powerful alternatives.

Amorphium 3.0

An odd one, this, and honourary winner of the most unusual method of creating 3D models. Amorphium Pro effectively treats the objects it creates as malleable lumps of clay that can be squeezed, stretched, twisted and crushed. In fact, the program could be described as a sort of king-sized metaball modeller.

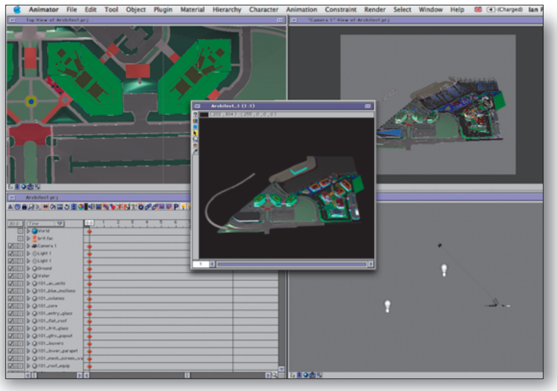
Despite this unique approach, Amorphium does enable you to create surprisingly accomplished scenes. The problem is that the program is so different to what's out there that mastering its controls won't do you a lot of good when you decide that it's time for more-sophisticated software.

Verdict: Amorphium

A different slant on 3D modelling, but probably too idiosyncratic to be much use as a day-to-day production tool. Fun, though.

Universe

There was a time not so long ago when if you wanted to undertake professional 3D animation you had only two choices: a high-end workstation or Electric Image on the Macintosh. Universe is the direct descendant of that venerable piece of software and, as such, offers the full range of features that you'd expect for a product at this price.

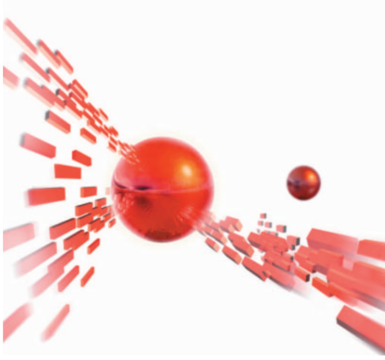


Hollywood favourite

Universe, surely the fastest renderer around?

Universe is split into four separate components: Modeller, Animator, Camera and Renderama. Although its modelling tools generally compare favourably with rivals, where Universe really excels is in its animation capabilities. These include the superb Match Move feature, which allows you to accurately match a model's movements with real movie footage.

The single feature that separates Universe from the rest, however, is its rendering speed. The program really does rip through its scenes at breakneck speed, which makes it a favourite tool of the Hollywood studios. New to Universe 5 are radiosity (finally) and multi-processor support.



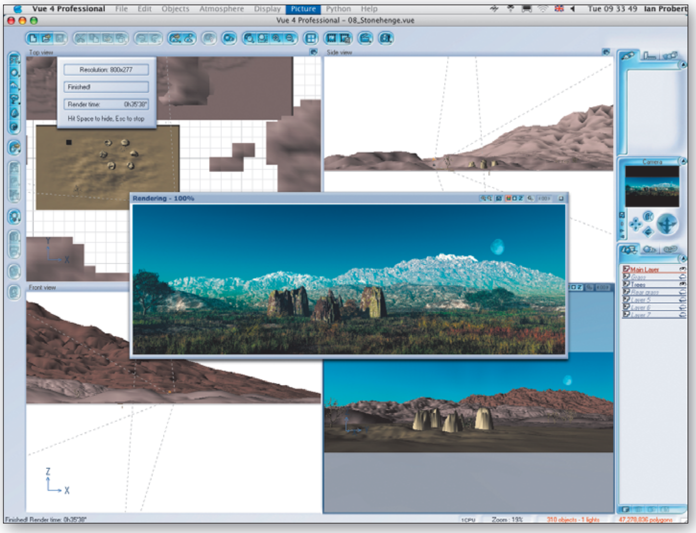
Verdict: Universe

A fantastic program for movie-makers who want to create special effects quickly and with the minimum of fuss.

Vue 4.0 Professional

Notwithstanding a lack of interest, it was probably Vue D'Esprit (renamed Vue 4.0 Professional) that was responsible for the demise of Bryce 3D. In fact, Vue 4.0 Professional can really be seen as a turbo-charged Bryce used for creating photo-realistic 3D terrains without the distraction of *that* interface.

Vue offers many improvements over Bryce. Although the two operate in a similar manner, Vue offers more control over foliage and yields superior photorealistic results. It also includes a sky dome with correctly positioned stars and layers for managing multiple objects.



Intuitive interface

Vue 4.0 Professional is easy to learn and able to produce beautifully rendered 3D landscapes.

Vue 4.0 Professional also includes animation capabilities. These are a tad rudimentary but produce impressive results The program exports its models in a variety of formats, which make them ideal for incorporating into other 3D applications.

Verdict: Vue 4.0 Professional

Vue 4.0 Professional is without a doubt the best and most flexible 3D-terrain generator on the Mac. **MW**

Macworld.co.uk Search Macworld's Reviews database online (**www.macworld.co.uk**), updated throughout the month

Hacking Mac OS X

How to tweak Apple's strict interface rules. By David Pogue

Beyond simple modifications such as customizing your desktop picture, error beep, and screen saver, Mac OS X offers only a subset of the tweakable features found in other operating systems. You can't record sounds, change the fonts used in the Finder, adjust the colours of your scroll bars, and so on.

If you're sneaky, creative, or just different, however, you can indeed perform more dramatic visual and behavioural surgery on your copy of Mac OS X – from changing the startup screen image to replacing the "poof" that appears when you drag something off the Dock with a new animation of your own. All you need is a few of Mac OS X's less obvious tools, or some free downloadable customizing software, and a few recipes like the ones in this chapter.

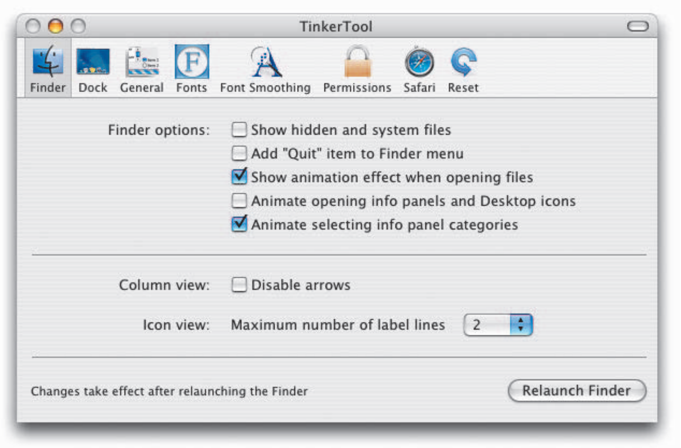
Some of these tricks are frivolous. Some are actually functional and useful. And although Apple sanctions not a one, all are perfectly safe.

History has shown that Apple considers Mac OS X a work in progress. A huge number of the fun little hacks that worked in Mac OS X 10.1 stopped working in 10.2. All of the tricks in this chapter work in 10.3, but may well break in subsequent versions of Mac OS X. The Errata page for this feature at **www.missingmanuals.com** will keep you up to date.

TinkerTool: customization 101

If you poke around the Mac OS X Web sites and newsgroups long enough, you'll find little bits of Unix code being passed around. One of them purports to let you change the genie animation that you see when you minimize a window to the Dock. Another eliminates the drop shadow behind icon names on your desktop. Yet another lets you change the transparency of the Terminal window (Chapter 15) – a cool, although not especially practical, effect.

If you really want to fool around with these bits of Unix code, go for it. You'll find most of these tidbits at Web sites like **www.macosxhints.com**.



Finder options:
☐ Show hidden and system files
☐ Add "Quit" item to Finder menu
☑ Show animation effect when opening files
☐ Animate opening info panels and Desktop icons
☑ Animate selecting info panel categories

Column view: ☐ Disable arrows

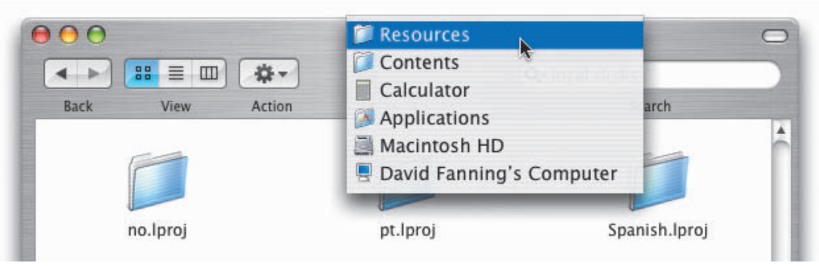
Icon view: Maximum number of label lines 2

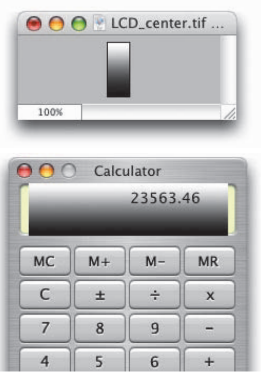
Changes take effect after relaunching the Finder

Kill the animations
TinkerTool is a double-clickable program that makes changes only to your account settings. (You can download it from the "Missing CD" page of ***www.missingmanuals.com****, among other places.)*

The truth is, however, that there's no good reason for you to subject yourself to the painstaking effort of typing out Unix commands when easy-to-use, push-button programs are available to do the same thing.

TinkerTool 3, for example, is a free utility that offers an amazing degree of control over the fonts, desktop, Dock, scroll bar arrows, and other aspects of the Mac OS X environment.





Picture perfect

Top: Cocoa programs are nothing more than a bunch of artistically done Photoshop TIFF files, buried in the program's package_Contents_ Resources folder. When you feel the need for change, go ahead and edit them – hey, it's your computer. Bottom: When you're editing the Calculator program, you can edit the LCD_center.tif, LCD_right.tif, and LCD_left.tif files (left) to change the look of the readout window (right). In this example, the "center" portion gets stretched as wide as necessary to fill the width of the Calculator screen.

Here are some of the highlights:

Kill the animations When you open any icon, expand a Get Info panel, and so on, you see little animated expansion effects. It's nice, but it takes time. TinkerTool can turn them off (see "Kill the animations", page 76).

Dock TinkerTool lets you gives hidden programs transparent icons on the Dock and specify the Dock's position on the screen – left, right, bottom, or top – and even whether it's centred or flush against one side of the screen. TinkerTool even unlocks a third option for the animation of windows collapsing onto the Dock. In addition to the standard Mac OS X choices (Genie and Scale), you also get something called Suck In (no comment).

Scroll bars TinkerTool gives greater control over the placement of Mac OS X's scroll bar arrows – together at one end of the scroll bar, duplicated at both ends of the scroll bar, and so on.

Visibility TinkerTool can make the thousands of invisible Unix files appear as full-blooded icons. (Power users, you know who you are.)

Fonts TinkerTool lets you change the fonts for dialog boxes, menus, title bars, help balloons, and so on.

What's great about TinkerTool is that it's completely safe. It's nothing more than a front end for a number of perfectly legitimate Unix settings that Apple simply opted not to make available in the regular Finder. Furthermore, the changes you make using TinkerTool are stored in your own Home_Library folder – that is, they affect only your account. Whatever changes you make don't affect the Mac experience for anyone else using your machine. And TinkerTool's Reset pane makes it easy to restore everything back to the way it was before you started fooling around.

Redoing Mac OS X's graphics

The professional interface artists at Apple use Photoshop, just like professional artists everywhere else. But in Mac OS X, they've made very little effort to cover their tracks. In Cocoa programs and even a few Carbonized ones, every element of the famous Aqua interface is nothing more than a Photoshop-generated graphics file.

The beauty of graphics files, of course, is that you can edit them. Maybe you just want to adjust the colours. Maybe you found a replacement graphic online. Or maybe you actually want to draw a new graphic from scratch. In each of these cases, using a program like Photoshop, Photoshop Elements, or GraphicConverter, you can dress up your own desktop in your own way.

In addition to a little artistic talent, all you need to know is how to open the graphics that constitute the interface of each program. The routine generally goes like this:

1. In the Finder, open the Applications folder. Control-click the icon of the program you want to edit; choose Show Package Contents from the contextual menu.

Most Mac OS X programs may look like single icons, but are actually disguised folders containing all of their own support files.

You can choose almost any Cocoa program to edit in this way: Address Book, Chess, iChat, Mail, iPhoto, Safari, iDVD, iMovie, TextEdit, whatever.

2. Open the Contents: Resources folder. Inside are the objects of your search: the TIFF or PDF files that constitute the "face" of the program you're editing. (Sometimes they're one more folder down, in a folder representing your language – English.lproj, for example.)

When you're editing the Mac OS X Chess game, for example, you'll find a folder called Styles, which contains the graphics that create the game board and the textures that wrap around each of the pieces. There's nothing to stop you from swapping in photos of your friends' heads in their places. "Picture perfect" shows another example.

While you're at it, you may also want to open up Mac OS X's Mail program and redesign its toolbar icons. The sky's the limit!

3. Open the TIFF files in Photoshop. Edit them brilliantly.

4. Save your changes.

The deed is done. You now have a program that you can decidedly call your own.

Tip

If you think you may want to go back to the program's original look after your experiment, make a safety copy of these files before proceeding.

Editing the Trash and Finder icons

You can edit the Finder dock icon and the Trash icons (empty and full) exactly as described above – but you have to peek into a different corner to find them. The Dock program, after all, isn't in your Applications folder; it's in your System folder. And in Mac OS X, the System folder is sacred territory, forbidden to humans. An error message will let you know that you're not allowed to edit the graphics files that make up Mac OS X itself (rather than its applications). In this Mac OS X hack and in several others in this chapter, you'll have to find a way around this kind of OS self-protection.

You can go about it in any of three ways:

- Restart in Mac OS 9, if your Mac is capable of it. Doing so bypasses the objections you'll get from Mac OS X as you try to hack the system.
- Log into Mac OS X as the root user.
- Here's a technique that's new to Panther: Alt-drag the icon you want out of the System folder, edit a copy of it (preserve the original, just in case), and then Alt-drag it back into place.

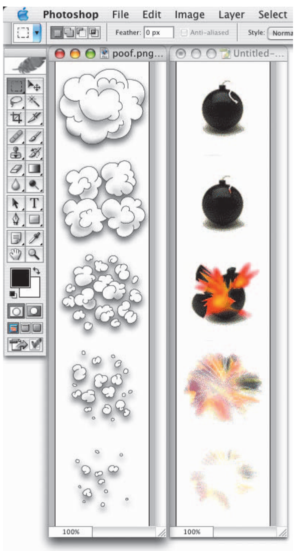
As soon as you begin to Alt-drag one of these sacred files, Mac OS X asks you to prove your hackworthiness by entering an administrator's name and password – and then it lets you proceed with your surgery.

In any case, to edit the Finder or Trash icons, you'd start by opening the System: Library: CoreServices folder. Control-click Dock and choose Show Package Contents from the contextual menu. The Dock window opens. Open the Contents: Resources folder. These are the graphics you want to edit (as PNG graphics instead of TIFF): finder.png, trashempty.png, and trashfull.png.

Replacing the poof

When you drag an icon off the Dock or toolbar, it disappears with a literal puff of smoke – a cute, cartoon-like animation that Apple's been trying to work into its operating systems ever since the days of the Newton palmtop. Most people find this tiny, one-second display

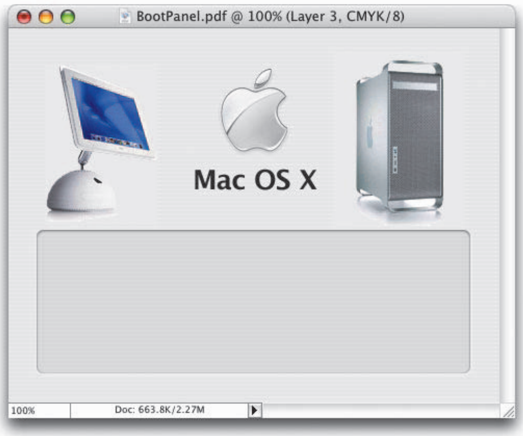
continues page 78



Up in smoke

The "poof" animation is nothing more than five individual frames of cartoon smoke, 128 pixels square. You'll find its file sitting inside the Dock package, as described in the previous section, alongside the finder.png and trash files. As shown here in Photoshop Elements, you can substitute any graphics you want, as long as you fit them evenly on this 640-pixel-tall "film strip" (that is, 128 pixels times 5). Save, quit, and then restart.

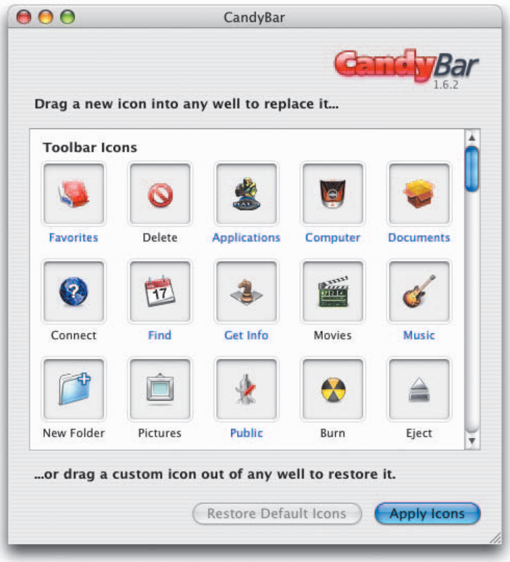
Customize startup
Open the System: Library: CoreServices: SystemStarter: folder. Control-click the QuartzDisplay.bundle icon and, from the contextual menu, choose Show Package Contents. In the resulting window, open the Resources folder to find the object of your quest: a file called BootPanel.pdf. You can edit this file to your heart's content in, for example, Photoshop. After you save changes and then restart, you'll find your new graphic in place.



of interface magic charming and witty, but others argue that it demeans the dignity of the otherwise professional-looking Mac OS X.

If you follow that latter camp, you can replace the animation just by editing Apple's own five-frame "poof" animation. "Up in smoke" shows the procedure.

Replacing Finder icons
This one's easy: Just download CandyBar, a simple drag-&-drop program for Mac OS X 10.3. With no technical skill whatsoever, you can use this program to replace the icon pictures featured on your folders, disks, and the Finder toolbar. It even comes with several collections of perky (but non-photorealistic) replacement icons. To use CandyBar, just drag your new icons onto the appropriate slots. When you restart the Mac, you'll find your new icons in place. Restoring the original icons is equally simple.



Redoing the startup and login screens

Yeah, yeah, sure, Mac OS X makes it easy to change the desktop picture. But what about the boring Mac OS X, Apple-logo picture that appears while the startup progress bar is chugging across the screen? And what about the default swirling blue desktop picture that appears behind the sign-in screen?

Don't despair – you can make these look like anything you want. Here you go:

■ The background behind the "Welcome to Mac OS X" sign is a JPEG graphic, called Aqua Blue.jpg, located in the Library_Desktop Pictures folder. (Classic Aqua Blue.jpg was the standard desktop picture in Mac OS X 10.1.) You can open and edit this file directly – or replace it with another graphic having the same name and file format. At the next startup, you'll enjoy your new background.

■ The sign-in screen graphic is only slightly harder to change. It involves bypassing Mac OS X's security shield, using any of the three techniques described previously. Then see "Customize startup".

Editing your menulets

You can colourize the little menu-bar symbols fondly called menulets, or even completely redesign their graphics. Like many other OS X screen elements, these are little tiny graphics saved in PDF format.

Here again, you can't save changes to them unless you (a) restart in Mac OS 9, (b) log in as the root user, or (c) Alt-drag the original files to the desktop, edit them, and then Alt-drag them back in. Open the System: Library: CoreServices: Menu Extras folder.

Here, you'll find individual files (actually packages) for almost every menulet: Battery, Clock, Displays, and so on. Open whichever one you want to customize (Airport.menu, for example) by Control-clicking it and choosing Show Package Contents. As usual, open the Contents: Resources folder.

Inside are a number of TIFF files that represent the various forms your menulet might take; the Volume icon, for example, seems to emit different numbers of sound waves depending on your volume setting. Edit each of the graphics as you see fit. (The ones whose names are tagged with an s or w represent the inverted highlighted graphic, which you see when you click the menulet.)

Rewriting the Words

Mac OS X stores the text and settings of its menus, dialog boxes, and other elements in special text files called plist (for Property List) files. They sit in one of the three Library folders (in your Home folder, the System folder, or the hard drive window).

The easiest way to edit them is to use Apple's Property List Editor, a program that came on your Mac OS X Developer CD. Once you've installed your developer tools, you'll find Property List Editor in Developer_Applications.

There are hundreds of plist files, so experimentation and patience are required. Most of the cool changes you can make to your plists can be made much more easily using TinkerTool. Here, however, is an example of a smaller change you can make this way.

Renaming the Trash

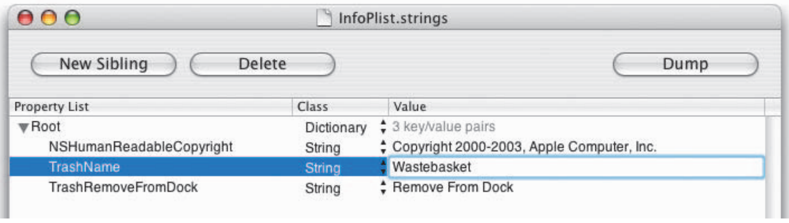
It's called Trash, but in Mac OS X, it looks more like an office wastebasket. When inspiration on the work you're supposed to be doing runs dry, consider remedying this discrepancy by changing the name of the Trash icon to something more appropriate.

In PropertyList Editor, choose File: Open. Navigate to System: Library: Core Services: Dock: Contents: Resources: English.lproj: InfoPlist.strings.

Click the Root triangle to view and edit the three settings, as directed in "Name game". Once you're finished making the change, choose File: Save As, and save your edited plist document to the desktop. Now replace the original document (after making a safety copy, if you like) with your edited version, using any of the three techniques described earlier. In any case, the next time you log in, you'll see your new name on the Trash.

Rewording the Dock Using the same routine described in the previous paragraphs, you can edit all of the commands that pertain to the Dock – both its commands in the a menu (Dock Preferences, Turn Magnification On, and so on) and the contextual menus that pop out of the Dock icons themselves. These wordings are in System: Library: Core Services: Dock.app: Contents: Resources: English.lproj: DockMenus.plist. Click the flippy triangles to see the various commands you can rewrite.

Name game
Below: This simple file contains the name of the Trash icon on the Dock – and the name of the Eject icon that replaces it when you're dragging a disk. By double-clicking the text in the Value column, you can edit these descriptions to change the corresponding names.



Property List	Class	Value
▼Root	Dictionary	3 key/value pairs
NSHumanReadableCopyright	String	Copyright 2000-2003, Apple Computer, Inc.
TrashName	String	Wastebasket
TrashRemoveFromDock	String	Remove From Dock

Speech recognition tips...

Speech recognition

Although it may surprise many Mac users, the Mac is quite talented when it comes to speech. Its abilities fall into two categories: reading text aloud, using a synthesized voice; and taking commands from your voice.

The Apple marketing machine may have been working too hard when it called this feature 'speech recognition' – the Mac OS feature called PlainTalk doesn't take dictation, typing out what you say. (For that, you need a program like IBM ViaVoice for Mac OS X, **www.ibm.com**, or iListen, **www.macspeech.com**.)

Instead, PlainTalk is what's known as a command-and-control technology. It lets you open programs, trigger AppleScripts, choose menu commands, trigger keystrokes, and click dialog box buttons and tabs – just by speaking their names.

Few people use PlainTalk speech recognition. But if your Mac has a microphone, PlainTalk is worth at least a 15-minute test drive. It may become a part of your work routine forever.

Your first conversation with the Mac

The on/off switch for speech recognition in Mac OS X is the Speech panel of System Preferences (see "Listen up", right). Where you see 'Apple Speakable Items is,' click On. (The first time you do this, a small instructions-window appears. Read it if you like, and then click Continue. If you ever want to see these tips again, click the Helpful Tips button on this pane.)

The feedback window

Check out the right side of the screen: A small, microphone-like floating window appears (see "Freedom of speech", right). The word Esc in its centre indicates the 'listen' key – the key to hold down when you want the Mac to respond to your voice.

(You wouldn't want the Mac listening all the time – even when you said, for example, "Hey, it's cold in here. Close the window." Therefore, the Mac comes ready to listen only when you're pressing that key.)

You can specify a different key, or eliminate the requirement to press a key altogether, as described in the next section.

When you start talking, you'll also see the Mac's interpretation of what you said written out in a yellow balloon just over the Feedback window.

The Speakable Commands window

Here's the most important single fact to understand about PlainTalk speech recognition: The only commands it understands are those listed in the Speakable Commands window, which generally appears automatically when you turn on speech recognition.

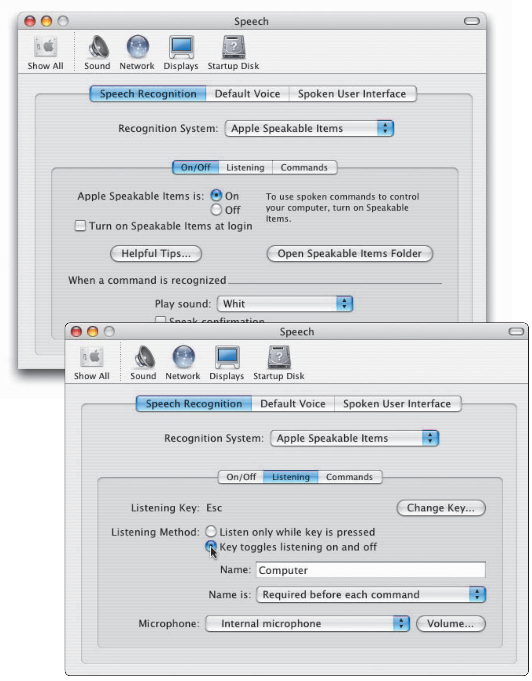
Keeping your eye on the Speakable Commands window is essential, because it offers a complete list of everything your Mac understands. Some of them represent shortcuts that would take several steps if performed manually.

To open this list if it isn't open, click the tiny arrow at the bottom of the Feedback window and choose Open Speech Commands Window from the commands that appear. Here are a few examples of what you'll find in the list at first:

Open Sherlock Launches the Sherlock file-finding program.

Close this window Closes the frontmost window instantly.

Empty the trash Works only when you're in the Finder.



Recognition System: Apple Speakable Items

Apple Speakable Items is: ● On ○ Off

To use spoken commands to control your computer, turn on Speakable Items.

☐ Turn on Speakable Items at login

When a command is recognized

Play sound: Whit

☐ Speak confirmation

Listening Key: Esc

Listening Method: ○ Listen only while key is pressed ● Key toggles listening on and off

Name: Computer

Name is: Required before each command

Microphone: Internal microphone

Listen up
Top: Turn off listening altogether using the On/Off tab. Bottom: If you turn on "Key toggles listening on and off," then you don't have to press a key to make the Mac listen – instead, pressing the designated key turns the speech recognition feature on or off completely. In the Name blank, type the name you want the Mac to listen for as it monitors the sound from your mic.

Switch to AppleWorks Brings AppleWorks to the front. (Of course, you can say "switch to" and then the name of any running or recently used program.)

Quit all applications Saves you the trouble of switching into each program and choosing Quit.

Open the Speech Commands window or **Show me what to say** Opens the Speech Commands window, of course.

What day is it? Tells you the date.

Tell me a joke Begins a pathetic/funny knock-knock joke. You have to play along, providing the "who's there?" and "so-and-so who?" answers.

Mac OS X updates the listing in the Speech Commands window in real-time, according to the context. When switching from one program to another, you see a list of the local commands that work in the new program. You'll discover that when you use the "Tell me a joke" command, for example, you don't necessarily have to say, "Who's there?" You can also say "Stop," "Go away," or "Stop with the jokes!" (It must really be fun to work at Apple.)

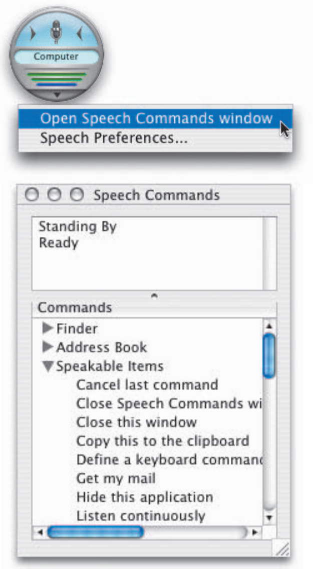
Speaking to the Mac

When ready to talk to your computer, position the microphone between one and three feet from your mouth. If it's a headset mic, make sure it's plugged into the microphone or USB jack. If it's built-in, speech recognition may not be as accurate.

In any case, finish up by opening the Speech panel of System Preferences. Click the Listening mini-tab and use the Microphone pop-up menu to specify which microphone you'll be using (if you have a choice).

Now you're ready to begin. While pressing the Esc key (if that's still the one identified in the Feedback window), begin speaking. Speak normally; don't exaggerate or shout. Try one of the commands in the Speakable Commands list – perhaps "What time is it?" If the Feedback window doesn't display animated sound waves, indicating that the Mac is hearing you, something's wrong with your microphone setup. Open the Speech panel again, and confirm that the correct microphone is selected.

continues page 80

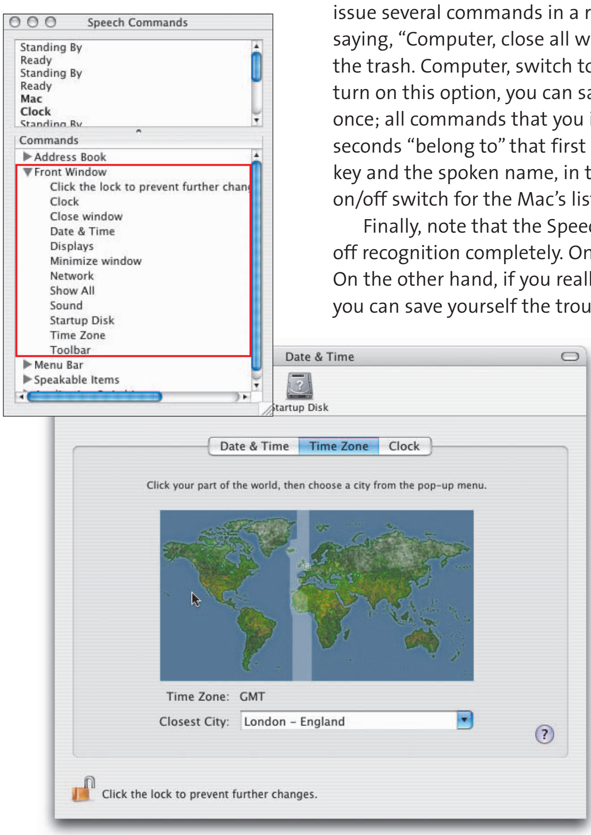


Standing By
Ready

Freedom of speech
Top: The Feedback window lacks the standard Close and Minimize buttons. If it's in your way, just double-click it (or say "minimize speech window") to shrink it into the Dock. If you choose Speech Preferences from its bottom-edge triangle, you open the Speech preferences window. Bottom: Choosing Open Speech Commands window, of course, opens the list of things you can say.

Tip

If you aren't using the push-to-talk method, you can still turn speech-recognition off temporarily by saying, "Turn on push to talk." Now the Mac listens to you only when you're pressing the designated key. To return to listening-all-the-time mode, say, "Listen continuously."



Click your part of the world, then choose a city from the pop-up menu.

Time Zone: GMT

Closest City: London – England

Click the lock to prevent further changes.

Front-row seat

The Front Window commands change automatically to reflect the controls that are in the frontmost window. For example, in the Date & Time panel of System Preferences, you can say anything in the circled area of the Speech Commands window: the name of any tab or window control (indicated by the arrows). Whenever you say an item, the Mac 'clicks' it for you. You can also speak the menus' names to open them.

Customizing speech recognition

You can tailor the speech recognition feature in two ways: by adjusting the way it looks and operates, and by adding new commands to its vocabulary.

Changing when the Mac listens

Early experimentation quickly showed Apple's speech engineers that having the microphone 'open' – listening full-time – was an invitation for disaster. Everyday phone conversations, office chatter, and throat clearings completely bewildered the software, triggering random commands.

Therefore, you must explicitly tell the Mac when you're addressing it. When you first turn on the speech recognition feature, the Mac expects you to alert it by pressing a key when you speak, such as the Esc key.

If you'd rather not have to press a key whenever you want the computer's attention, click the other option in this box, "Key toggles listening on and off." Now to get the computer's attention you must speak its name – which you type into the Name box – before each command. For example, you might say, "Computer, open AppleWorks," or "Hal, what day is it?"

The name you specify appears in the middle of the round Feedback window.

Note: This method of getting the computer's attention is less reliable than the push-a-key-to-talk system. Especially if you name the computer Hal; although that's hilarious in theory, polysyllabic names work better in practice.

By using the "Name is" pop-up menu, meanwhile, you can specify how big your window of opportunity is:

Optional before each command If you work alone in a quiet room, this is the choice for you. It means that you don't have to press a key or say the Mac's name when issuing a voice command. Everything you say is considered a command.

Required before each command Nothing you say is interpreted as a command unless you say the computer's name first, as in, "Macintosh, switch to Microsoft Word."

Required 15 seconds after last command, Required 30 seconds after last command Sometimes you want to issue several commands in a row, and would feel foolish saying, "Computer, close all windows. Computer, empty the trash. Computer, switch to AppleWorks." When you turn on this option, you can say the computer's name just once; all commands that you issue in the next 15 or 30 seconds "belong to" that first salutation. The push-to-talk key and the spoken name, in this case, serve as a master on/off switch for the Mac's listening mode.

Finally, note that the Speech pane also lets you turn off recognition completely. On the On/Off tab, click Off. On the other hand, if you really love the speech feature, you can save yourself the trouble of visiting this control panel each morning by turning on "Start Speakable Items at log in." Speech recognition will be turned on and listening as soon as you log in.

Changing the feedback

Another set of options on the On/Off tab governs what the Mac does when it understands something you've said. For example:

Play sound The Mac generally makes a sound whenever it recognizes something you've said. Use this pop-up menu to control which of your built-in beeps you want it to use – or choose None.

Speak confirmation Sometimes the Speech Feedback window shows you a message of its own – when you use the "Empty the trash" command, for example, text in the Feedback window may inform you that a locked item prevents the emptying. The Mac generally reads this text aloud to you; turn this checkbox off if you'd rather have the Mac be silent.

Tip

To change the key you hold down when you want the Mac to listen, visit the Speech panel of System Preferences; click the Listening tab, and then click Change Key. A little message prompts you to press a different key. Your choices are Esc, tilde (~), Delete, F5 through F15 (not including the Eject key), or the keys on your numeric keypad – with or without the Shift, Control, or Option keys.

Triggering menus by voice

On the Speech panel of System Preferences, click the Speech Recognition tab, then click the Commands mini-tab on that window. Here you'll find a list of the command categories that Speakable Items can understand. As you turn each checkbox on or off, watch the Speech Commands window. Giant swaths of commands appear or disappear as you fool with these checkboxes, giving you a good indication as to their function. Here's a rundown:

Global Speakable Items This is the master list of Speakable Items shown in "Front-row seat".

Application Specific Items Certain Mac OS X programs come with preset lists of commands that work only when you're in the relevant program. For example, whenever you're in the Finder, you can say, "Empty the trash," "Go to my Home directory," "Hide the Dock," "Minimize all windows," "Make a new folder," and so on. When this checkbox is off, the Mac no longer recognizes any of these handy commands.

Application Switching This is the command category at the bottom half of the Speech Commands list – "Switch to Address Book," "Switch to AOL," and so on.

Front Window In the Speech Commands window, note the appearance of a new category of commands, called Front Window. The idea here is to provide quick speech-recognition access to the most prominent buttons, tabs, and icons in whichever window is before you. "Front-row seat" elaborates on the idea.

Menu Bar This command lets you open menus (in the menu bar) by speaking their names.

Once you say its name ("File menu," for example), the menu opens. Now you can say any command in the open menu ("New Playlist," "Save," or whatever). The Menu Bar category of the Speech Commands window changes to remind you of what you can say at any given moment.

You can probably see that the combination of Front Window and Menu Bar commands lets you do quite a bit of work on your Mac without ever needing the mouse or keyboard.

Improving the PlainTalk vocabulary

By putting an alias of a favourite document, folder, disk, or program into your Home_ Library_Speakable Items folder, you can teach PlainTalk to recognize its name and open it for you on command.

You can name these icons anything you want. You can also rename the starter set that Apple provides. You'll have the best luck with multiword or polysyllabic names – "Microsoft Word," not just "Word."

But one kind of icon PlainTalk can open is an AppleScript icon. Open your Home folder_Library_ Speech_Speakable Items – you'll discover that most of the built-in speakable-item icons are, in fact, AppleScript icons. The point is that you can make PlainTalk do almost anything, especially in the Finder, simply by creating AppleScripts and putting them into the Speakable Items folder.

Application-specific commands

Most of the preinstalled PlainTalk commands work in any program. You can say, for example, "Open Sherlock" to launch Sherlock from within any program.

However, you can also create commands that work only in a specific program. They sit in your Speakable Items_Application Speakable Items folder, inside individual application-name folders. For example, Mac OS X comes with commands for Internet Explorer that include Go Back, Go Forward, and Page Down.

If you get good at AppleScript, you can create your own application-command folders in the Speakable Items_Application Speakable Items folder.

Then open the program for which you want to create special commands and say, "Make this application speakable." The Mac creates a folder for the program in the Speakable Items folder; fill it with the AppleScripts you've created.

Of course, not every program is equally suitable to being voice-controlled – since PlainTalk is based on AppleScript, only programs that are AppleScriptable thrive with this treatment.

Note: If you give an application-specific icon the exact same name as one of the global commands, the Mac executes the application-specific one – if that program is running.

PlainTalk tips and tricks

When creating new commands, keep this advice in mind:

- Favour longer icon names. "Save the file" works better than "Save."
- If the name of an icon includes an acronym (such as FTP), put spaces between the letters (F T P), if you'll be pronouncing them as individual letters.
- You can precede the name of something in your Speakable Items folder with the word "open." PlainTalk doesn't care – "open Excel" and "Excel" do the same thing.

If you can't seem to make the speech recognition feature work, consider this checklist:

- If the stripes on the bottom half of the Feedback window don't change colour when you're speaking, something's wrong with your microphone arrangement. Revisit the Speech panel of System Preferences, and make sure you've selected the correct microphone.

Also make sure you've plugged the microphone into the correct jack on the back or side of the computer.

- Make sure you're pressing the correct key (if you're using the push-to-talk method), or speaking the name of the computer before each command (if not).
- Make sure you're saying the name of the working command, as listed in either the Speakable Commands window (which appears when you say "Show me what to say") or the Speech Commands list.

The Mac talks back

So far, you've read about the Mac's listening ability. But the conversation doesn't have to be one way; it's even easier to make the Mac talk. In fact, Mac can read almost anything you like: text that you pass your cursor over, alert messages, menus, and any text document in any program. It can speak in your choice of 22 synthesized voices, ages eight to fifty. The Mac's voice comes out of its speakers, reading with a twangy, charmingly Norwegian accent.

Setting up the Mac's voice To configure the way the Mac talks, revisit the Speech panel of System Preferences. Click the Default Voice tab at the top of the window. You can control which of the Mac's voices you want your computer to use, as well as how fast it should speak.

When your cursor passes over some text This feature is, obviously, a spectacular help for anyone who has trouble seeing. Now your cursor can "read" buttons, tabs, dialog box options, desktop icons, the subject lines of messages in your email inbox, and so on.

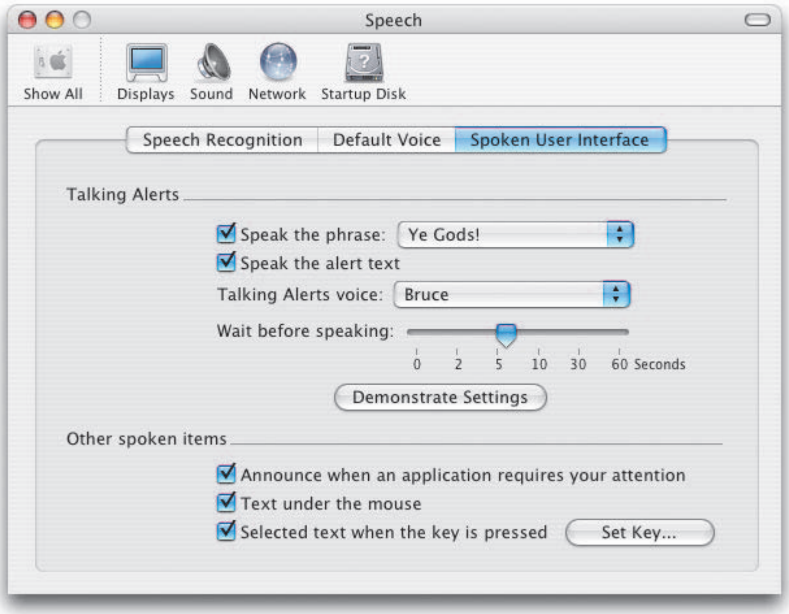
When a key is pressed In its own humble way, this option offers the most dramatic possibilities of all. It means that the Mac can read any text in any program. Now you can hear any Web page read to you, any email message, any sticky note – a welcome break for sore eyes. Furthermore, if you do any kind of writing at all, you'll discover the value of having your material read back to you out loud; it's a proofreading technique that reveals all kinds of typos and wordos that you wouldn't catch just by reading, even if you read it 50 times.

The very first time you turn on this checkbox, the Mac prompts you to specify a keystroke. (Later, you can always change the keystroke by clicking the Set Key button.) Now go to the program where you'd like the reading to happen. Highlight some text (or just press ⌘-A to select all of it). Then press the keystroke you specified. The Mac begins reading it aloud immediately. To interrupt the playback, press the same keystroke again. **MW**

Tip

Your Mac can perform an astonishing feat: It can convert a text file into a spoken digital recording in AIFF audio format. This is a twist with huge implications. If you transfer these files to your iPod, you can listen to your documents – email, Web pages, reports, eBooks, or anything else you can type or download.

Of course, commuters and joggers have been listening to Books on Tape for years, and companies like Audible.com create what you might call Books on MP3. But those products are expensive, and you can't listen to your own stuff. To pull this off, just download the two sample scripts at http://www.apple.com/applescript/macosx/text2audio.html.



☑ Speak the phrase: Ye Gods!
☑ Speak the alert text
Talking Alerts voice: Bruce
Wait before speaking:
☑ Announce when an application requires your attention
☑ Text under the mouse
☑ Selected text when the key is pressed

Loose talk
Here's where you tell the Mac just how chatty you want it to be. You can also control which voice it uses, and even how fast it talks – a slider, by the way, that you won't find on many of your human companions.

Mac OS X
Panther Edition
THE MISSING MANUAL
Mac OS X Panther Edition
David Pogue
O'REILLY

*David Pogue's **Missing Manual: Mac OS X Panther Edition** (Pogue Press/O'Reilly; ISBN 0-596-00615-2; £20.95) offers a wealth of detail on the all the changes in OS X 10.3.*

Pro CRT monitors

For high-end use the CRT still reigns supreme. By Alistair Dabbs

Contrary to popular opinion, good old cathode ray tube (CRT) displays aren't dead – yet. Flat-panel Liquid-Crystal Display (LCD) monitors may be taking over on the business desktop and to a certain extent in the design studio, but there remain particular benefits with lumbering CRT units that even the best LCDs can't match. The old technology can deliver screen space, flexibility, accuracy and reliability, not to mention affordability. Here, we look at five of the best Mac-friendly 21- and 22-inch CRT monitors, ranging from entry-level units to high-end colour-critical products.

The comparison with LCD alternatives is important. Design work loves large screens and big resolutions, and the 2,048-x-1,536-pixel resolution promised by 21/22-inch CRT leaves comparable LCD products in its wake. The best LCD can offer is the 1,920-x-1,200 of Apple's Cinema HD Display. The resolution difference isn't enormous, of course, but the expense is: the cheapest of the 21/22-inch CRT monitors reviewed here costs less than £400, while the Cinema HD Display is quadruple that price. In other words, you could buy four Viewsonic P225f CRT monitors instead of a single Cinema HD Display. If your Mac is fitted with dual video ports, you could run two simultaneous CRT monitors, effectively doubling your on-screen work space, and still be £800 better off than a colleague who went for a single LCD display.

At these prices, CRT is also tempting for buyers currently using much smaller displays. Most 21/22-inch CRT monitors are no more expensive than 17-inch LCDs and their 1,280-x-1,024-pixel resolution. LCD looks cool and frees up room on your desk, but given a limited budget designers can be forgiven for sacrificing space for screen space. On that note, the other big advantage

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Barco Reference Calibrator V

Barco Reference Calibrator V
www.barco.com
★★★★/8.3
Price: £3,250

Solidly-built in its two-tone blue case and solid-metal ambient light shield, the Reference Calibrator V is the latest in Barco's 'affordable' alternatives to its ultra-high-end displays. However, the high price means that this monitor offers the kind of colour precision that others can only dream of. To this end, the Reference Calibrator V is supplied with its own colorimeter and Calibrator Talk 5.10 software to ensure perfect colour matching. This system feeds the colorimeter readings back into the monitor.

The Reference Calibrator V is just about the only professional CRT display left on the market to employ 'shadow-mask' screen technology; everyone else has moved on to Trinitron-based 'aperture-grille' systems. As a result, Barco's finest suffers from a bowed screen like an old TV while the other four monitors on test here sport screens as flat as a steamrollered crêpe. This is inevitable, though, as flat-screen CRTs are more at risk of image distortion, which is something Barco could never accept.

On the other hand, the Reference Calibrator V seems to offer more colour precision than most colour professionals would ever need – even in mainstream colour prepress.

ALL PRICES EXCLUDE VAT.

NEC-Mitsubishi Diamond Pro 2070SB

NEC-Mitsubishi Diamond Pro 2070SB
www.nec-mitsubishi.com
★★★★/8.0
Price: £485

The NEC-Mitsubishi designers have clearly studied the G5 case and come up with a matte-grey look for its newest Diamond Pro range, which sits very attractively next to Apple's brushed-aluminium look. The screen is perfectly flat and offers top-class clarity and detail, much like the LaCie product, which is based on the same hardware.

Like the Electron22blue IV, the Diamond Pro 2070SB includes a Super Bright button for conveniently toggling the screen brightness up and down. NEC-Mitsubishi has even developed a utility that assigns brightness to particular tasks, but has neglected to make it Mac-compatible. Nor is there a hardware calibrator solution for this model, so it struggles to compete with the LaCie product despite the much lower price. As a result, perhaps, the on-screen colours seemed a bit muted but otherwise quite accurate.

On test, the Diamond Pro 2070SB performed well overall but struggled a little to achieve the full quoted 2,048-x-1,536-pixel resolution. We rate the monitor more for general purpose design and multimedia work than precision colour or high-res imaging, and for that level the price still seems fair.

of CRT over LCD is that you can switch resolution down without losing pixel precision. The resolution for LCD monitors is permanent, and other resolutions can only be emulated, typically producing blocky or fuzzy results.

Tube size

Before diving into the detail of monitor specifications, it's worth sorting out the confusion over 21-inch and 22-inch tubes. Big numbers are better, right? Well, yes, maybe. In principle, increasing the tube diagonal ought to give you a bigger picture. But as you may be aware, CRT does not let you view the full extent of the screen – maybe one or two inches less. This is because one of the limitations of CRT is that the electron beams become increasingly bent and the dots spread out at the edges and extreme corners of the screen image.

Looking at the product specifications, it doesn't seem to make much difference anyway: whether a monitor is classed as 21- or 22-inch, the actual viewable area is always 20 inches or thereabouts. So the real reason for increasing tube size to 22 inches is deliberately to allow a bigger gap around the edge and corners. This leads to less distortion of the image and loss of quality in these areas, producing an improved (or at least more controllable) image.

That said, you may get a 20-inch viewable area, but it might not be stable or geometrically correct until you drop it to 19 inches and leave a bigger border anyway. Our test results seem to back up the idea that 22-inch screens produce slightly better quality images, but it's hard to be scientific about it. Ultimately, the most important function of offering a larger tube size is to allow manufacturers to boast a bigger number than other manufacturers. Cynical, perhaps, but fair.

Resolutions

Several years ago, 21/22-inch monitors were expected to achieve a maximum pixel resolution of 1,600-x-1,200, but this has been overtaken by increasingly high-quality and high-performance graphics cards with plenty of fast on-board memory. While 1,600-x-1,200 may still be considered a sensible working resolution, most of these products support up to 2,048-x-1,536. Some people may disagree, but this isn't a usable resolution for working with software – it's solely for viewing ultra-high resolution images. At the top rate, you'd barely be able to read the menus and palettes in Photoshop.

That said, one major improvement in the latest line of CRT monitors is their support for fast vertical refresh rates to accompany these high resolutions. You no longer have to squint at flickery images now that the full 2,048-x-1,536 can be run at a stable 85Hz. Of course, this also depends on the capability of the video card in your Mac, something about which Apple tends to be rather coy. Apple quotes digital resolutions that inevitably refer only to its own LCD display models. Older cards may not support the top resolutions, or may only do so at 60Hz.

Those with less memory may still hit the right resolutions at the right refresh rate, but not in millions of colours.

We tested the five monitors here using a Power Mac G5-dual 2GHz under Mac OS X 10.3, using the ATI Radeon 9600 Pro graphics card fitted as standard in that model: 2,048-x-1,536 at 85Hz was no problem.

Viewsonic P225f

Viewsonic P225f
www.viewsonic.co.uk
★★★★/7.1
Price: £399

If you absolutely need the cheapest big-screen CRT monitor around, choose the Viewsonic P225f before looking for a lesser brand. The lower price means compromises in hardware quality, but Viewsonic makes the best of it. The case is plain, the on-screen display menus are fairly plain too, and there's no USB hub – but who cares? This is a sub-£400 22-inch monitor!

Unfortunately, having tested four impressive products so far, the P225f comes across (perhaps unfairly) as the runt of the litter. Focus is disappointing, producing fuzzy text at small type sizes. No doubt associated with this issue is the poor vertical resolution and appalling moiré effects; applying moiré correction from the on-screen menus made the focus even worse.

But while it has trouble standing alongside the likes of Barco and LaCie, the P225f is streets ahead of unbranded 21/22-inch CRT monitors on the market. Convergence is decent and the unit survived our ballooning test for power regulation with its head held high. We even liked the zoom toggle button at the front of the unit for quick adjustment tasks.

Just don't expect high-end performance. Note too that it can only achieve 2,048-x-1,536-pixel resolution at 75Hz, which may not be good enough for tired eyes.

Health and safety: what do all the logos mean?

VESA DPMS A system for enabling power saving, but without setting actual standards for power levels.

VESA DDC Display Data Channel standards for plug-&-play that allow the monitor to inform the computer of its capabilities.

Energy Star Approval from the American Environmental Protection Agency, which determines monitors that have power saving modes that use less than 30W.

Nutek Swedish specification for a two-step power-down approach. After an initial period of between five minutes and an hour, the monitor drops to a fast-waking power-saving mode under 30W. After 70 minutes, the monitor drops to a second mode that uses less than 8W.

MPR II Non-ionizing magnetic radiation restrictions defined by the Swedish testing authority, Swedac.

MPR-III Consolidates MPR-II with TCO standards.

TÜV/GS Proves that a monitor has been tested for electrical safety in the German market.

TÜV/EG Proves that a monitor has been tested according to certain European and German legal standards for safety, ergonomics, and emissions (MPR II).

ISO 9241/3 /7 /8 International standards for monitor ergonomics, supported by the UK's Health and Safety Executive.

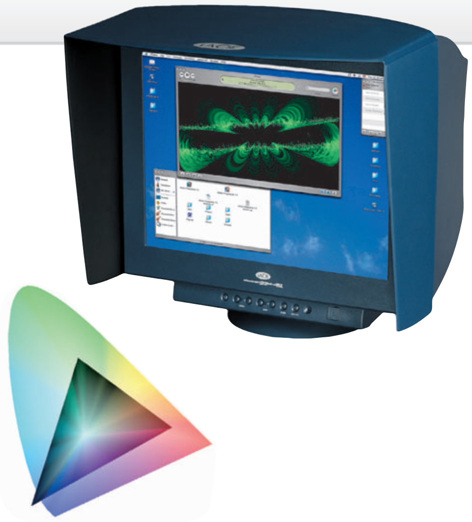
CE Conforms to European laws on radio frequency emissions and immunity to interference.

TCO92 Power saving and electromagnetic emission guidelines defined by Sweden's Confederation of Professional Employees trade union, the TCO.

TCO95 Everything in TCO92 plus requirements for recycling, use of chemicals in manufacture, and visual ergonomics.

TCO99 Everything in TCO95 plus additional ergonomics, power saving and emission requirements.

LaCie Electron22blue IV



LaCie Electron22blue IV
www.lacie.co.uk
★★★★/8.4
Price: £549

Fourth in LaCie's award-winning series of Electron22blue displays, this is the kind of monitor you might buy if you originally fancied a Barco before looking at prices. Like its predecessors, the Electron22blue IV is built in a dark-blue case and comes supplied with a plastic ambient light shield, promising just about the best CRT performance you can get within the realms of affordability. For more measurable accuracy, you can invest in an optional BlueEye system for first-rate hardware calibration. As with previous models, the unit comes fitted with two VGA inputs but this time there is only one upstream route in the three-port USB hub. So while you can attach the monitor to two computers simultaneously, you can only use the hub for one of them.

One new feature worth mentioning is the 'SB' button on the front of the unit, which toggles between three preset colour temperature settings. The idea is to let you darken the image for everyday work or brighten it up (Super Bright mode, hence 'SB') for movie playback and games, which tend to hide a lot of detail in the shadows.

Connections

Two of the monitors we tested (the LaCie Electron22blue IV and NEC-Mitsubishin Diamond Pro 2070SB) provide two video-input ports. This lets you hook up the device to two computers. Arguably this is of limited use to most designers who would rather have two monitors with one Mac than two Macs with one monitor. However, it's extremely useful for those who work on cross-platform projects. Given the size of a 21/22-inch CRT monitor, it may be a relief to have just one display on your desk plugged into a Mac and a Windows PC, then use a button on the front of the unit to toggle between the two. Not only could you work on both platforms simultaneously without moving from your seat, a Web designer could check how images and pages actually appear on the two platforms without faking it with the 'Windows RGB' preview commands in Photoshop and Dreamweaver.

All but one of the monitors incorporate a USB hub. The ports are usually positioned on the side of each unit for reasonably easy reach, albeit not as convenient as the front-located ports on the Power Macintosh G5 box itself. They are provided on monitors for expanding permanent connections – not necessarily for ad hoc tasks such as downloading images from digital cameras.

On-screen display

Quality monitors are controlled using a set of on-screen display (OSD) menus. At the most basic level, you use the OSD to establish image size, shape and overall geometry. But 21-inch monitors provide a whole lot more, including comprehensive top and bottom pincushion balance.

On account of the screen size, vertical linearity adjustment controls are helpful, while horizontal and vertical convergence controls are absolutely essential to eradicate blurring through misregistered electron guns.

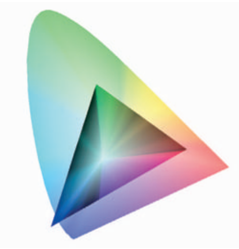
Colour adjustment is important too, and all 21/22-inch monitors support white-point adjustment of the overall colour temperature. They also let you compensate for magnetic influences on colour purity, albeit to varying degrees of precision. LCD monitors, of course, don't have this problem.

Final word

Before buying, check the terms of the warranty. Good manufacturers offer three years of on-site support, which in practical terms means they will send out a replacement by courier if your model goes pop within that period. Any less than three years signals a manufacturer's lack of faith in its own product, and return-to-base warranties are undesirable given the size and weight of the damn things.

Ultimately, top quality though they are, this line-up of giant CRT monitors strengthens our belief that the future lies in LCD. Despite CRT's lower price and greater flexibility, LCD is eventually going to catch up in both respects. But until then, pick up a bargain (or go for high-precision colour accuracy) and let other people be the LCD pioneers. At the colour-conscious, design-led end of the market, CRT won't die any time soon. Like hard disks – another 'old' technology that refuses to lie down – there's plenty of life left in it yet. **MW**

Sony Multiscan F520



Sony Multiscan F520
www.sony-cp.com
★★★★/7.9
Price: £769

Display pioneer and father of Trinitron, Sony is nevertheless an unpredictable manufacturer. There's a lot to like about the Multiscan F520, but not everything goes Sony's way.

It's a good-looking device in two-tone silver and grey with all the right connections including BNC inputs, and a four-port USB hub on the right-hand side. An optional calibrator is available for precision colour work, and the screen promises one of the tightest aperture-grille pitches in the entire 21/22-inch CRT class at a mere 0.22mm.

A Picture Effect button at the front toggles between three preset colour modes, labelled Standard, Professional (more accurate for image editing) and Dynamic (brighter for multimedia).

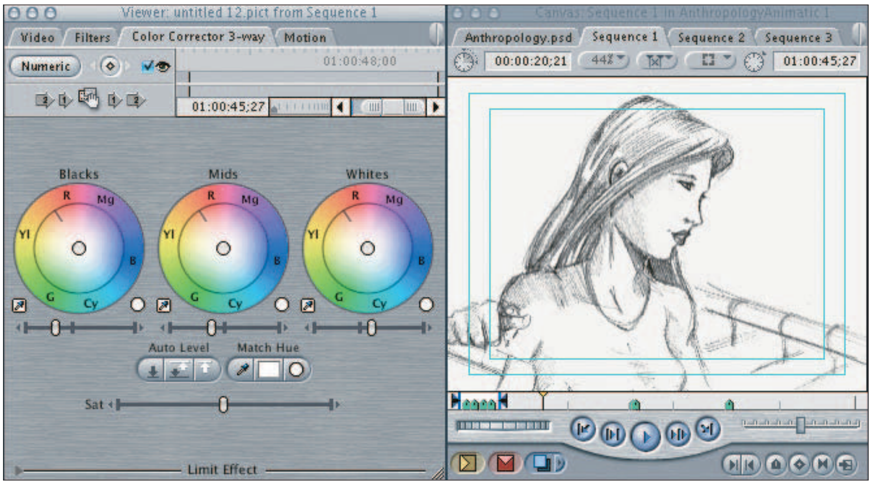
When lab tested, though, the Multiscan F520 throws out a mixed bag of results. You get good, crisp text, no streaking, and the minor colour purity issue we noticed was quickly corrected using the screen-region-based adjustable 'landing' function. Yet a ballooning test of flashing white on black reveals a little wiggle due to less-than-perfect power regulation, some left-to-right image distortion, and a curious convergence problem that varied from left to right at the top and bottom of the image, but not in the middle areas.

***Note:** calibrated gamuts measured using Pantone ColorVision Spyder and OptiCAL software from Colour Confidence (www.colourconfidence.com).*

Storyboarding in FCP

Use Final Cut Pro to create animatics. By Anton Linecker

Animatics are animated storyboards – usually set to music, with sound effects and temporary dialogue – that professional filmmakers, commercial agencies, and special-effects artists use to visualize the look and tempo of their projects. To create your own animatic, all you need is a set of storyboard drawings, a batch-capable scanner, and a Mac equipped with Apple's £799 (including VAT) Final Cut Pro 4. With Final Cut Pro 4's RT Extreme feature, you can preview the animatic in real time as you build it. And when finished, it can be output from Final Cut Pro 4 to tape, DVD, or a Web site.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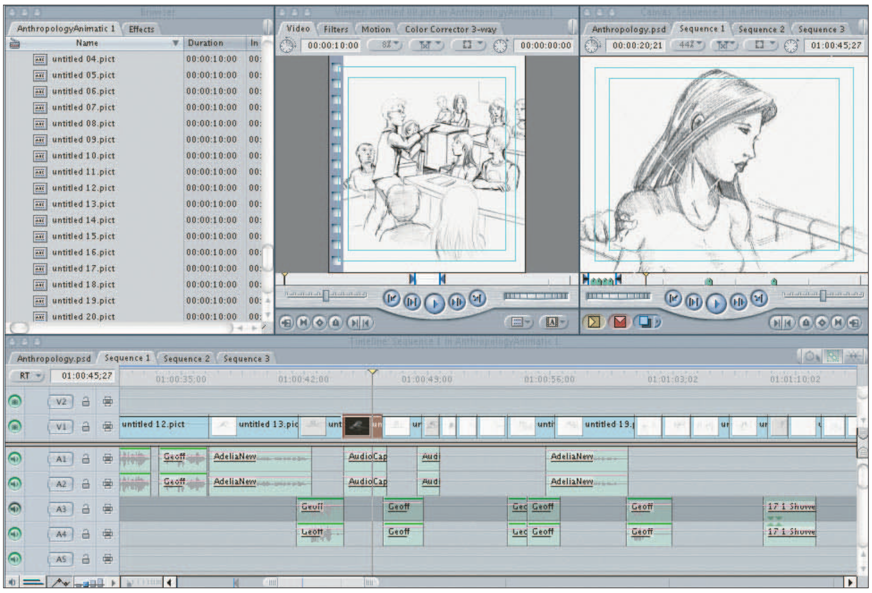
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Animate this

You can adjust the contrast of scans with Final Cut Pro's Color Corrector 3-Way filter (below, top). Once motion and sound are added, you can output the finished animatic (below, bottom) to tape, DVD, or a Web site.

STORYBOARD BY MICHELLE MALIK

Anatomy of a storyboard A storyboard is a collection of black-&-white pencil or ink sketches that tells a story visually. Each sketch depicts one shot's action, character positions, camera framing, and special effects.

Animatics sometimes require additional keyframe images when a shot is complicated or has a lot of movement. For example, a long moving shot may have three or more images to better describe the movement, the action, and how characters interact.

A traditional storyboard can have six or more story frames on an 8.5-x-11-inch page. An animatic storyboard often has only one frame per page, and it doesn't have to be of those dimensions. Because you'll scan each frame, it's easier to scan multiple pages in a batch process than to play with scanner framing to pull multiple images off each page.

To simplify the batch-scanning process, make sure all frames have the same orientation, and that the drawing area is consistent. Some animators even peg-register each page – this process requires a special type of hole punch for the paper; the holes in the paper fit over pegs that keep each page perfectly aligned when they're photographed.

Scan me up

Animatics can easily contain hundreds, if not thousands, of individual drawings, so a scanner with an automatic page feeder is a smart investment. You'll also need scanning software that can handle batch scanning. I prefer Lemke Software's $30 shareware application, GraphicConverter. Scan art using a greyscale setting, such as true grey, rather than a line-art or a black-&-white setting (the exact terms depend on the scanning program you use). Choosing line-art or black-&-white can make scans too contrasty. Greyscale preserves detail such as shading and light pencil strokes. You should also think about lowering the brightness and contrast settings.

Adobe
Illustrator CS

This is particularly important with pencil art, but it can also enhance charcoal and ink drawings. Lowering the brightness will give a flatter, greyer scan, but it preserves fine detail. You can tweak the results later using Final Cut Pro 4's colour corrector. For a DV NTSC project, make your scan dimensions at least 720-x-534 pixels. (Scanners use square pixels; Final Cut Pro will convert these into nonsquare pixels when imported into a 720-x-480 DV sequence.) This results in the exact frame size of your project – you won't have any wiggle room.

For DV PAL projects 768-x-576 pixels gets squeezed to 720-x-576, meaning you change the horizontal size rather than vertical as with NTSC.

If you want to pan across your image, as in a Ken Burns documentary, you'll need extra real estate. If you're planning to zoom in on a picture, you'll need more pixels so the picture isn't blurry when it's blown up. I often scan my 8.2-x-11 animatics storyboards at 150dpi.

Whatever dimension and resolution you choose, batch-scan all pictures at one setting. While it may waste some hard-drive space to scan all the pictures at the maximum size you need, it will save time later. When saving images, number them with leading zeros (for example, Scan001, Scan002, Scan003, and so on) so Final Cut Pro 4 will order the frames properly. Save your files in the PICT, TIFF, or Targa format.

Bring pictures to life

Once you've scanned your storyboards, open Final Cut Pro 4 and go to User Preferences. Under the General tab, choose a Stills/Freeze Frame Duration setting of whatever length you think is needed. Give some thought to tempo. Will you need a shot longer than the default ten seconds? Do you need only six seconds?

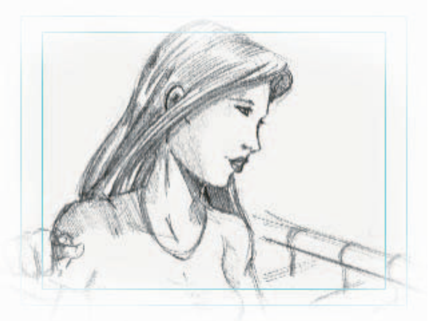
Import the folder containing all the image files. It will appear in your browser with an expansion arrow next to it. If you click on that arrow, you'll see the numbered files. To create the structure of the animatic, start a new sequence and pick DV PAL 48kHz. Now choose all the image files in folder, either by pressing ⌘-A or by highlighting the folder itself, and drag it into the Canvas window or the timeline. The clips will align themselves in the sequence, with their lengths based on the duration setting in User Preferences.

Now you can set the overall framing and colour for the animatic. To get real-time previews, enable Final Cut Pro 4's RT Extreme from the RT pull-down menu on the upper-left side of the timeline window. This way, you can work on the sequence without wasting time rendering footage. Unless your animatic is very short, you won't want to frame and colour-correct each image individually. Final Cut Pro 4 lets you work on one image, get it right, then apply the same settings to all the other clips.

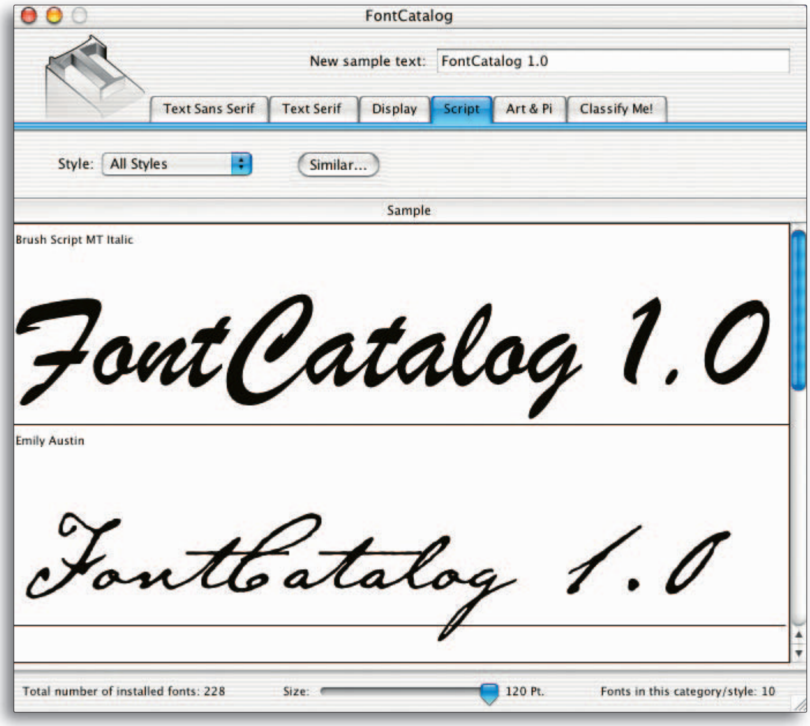
Double-click the first image of the sequence so it loads into the Viewer window. Click the Motion tab. Set the scale of the image and centre it properly. When happy with the image placement and size, apply FCP's Color Corrector 3-Way filter to the clip (Effects: Filter: Color Correction: Color Corrector 3-Way). Select the Color Corrector 3-Way tab in the Viewer. If you did a low-contrast scan, you can boost the Whites level and lower the Blacks level to get acceptable contrast (see "Animate this").

Once the clip looks good, copy it and select all the other clips in the sequence (by pressing ⌘-A or using the All Tracks Forward tool). Select Paste Attributes under the Edit menu. In the Paste Attributes window, deselect Scale Attribute Times and choose both Basic Motion and Filters. Click OK to apply the sizing and colour characteristics of the first frame to the selected clips.

At this point, you have a basic animatic. You can adjust individual clip lengths to match a soundtrack, create keyframed pans and zooms, and add dialogue and effects. When done, you'll have a minimovie that conveys your intentions for the project. **MW**



Fast font finding



FontCatalog

New sample text: FontCatalog 1.0

Brush Script MT Italic

FontCatalog 1.0

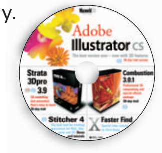
Emily Austin

FontCatalog 1.0

Total number of installed fonts: 228 Size: 120 Pt. Fonts in this category/style: 10

FontCatalog 1.0, from PrePress Consolidated Color ($30; **www.prepressmiami.com/fontcatalog**), is designed for those of us who are more visual than systematic. You can search for typefaces by design, not just by name. You can also look at text displayed in several (even hundreds of) faces simultaneously. If you still don't like what you see, select the font that comes closest and click on FontCatalog's Similar button; the application will search your hard drive and activate any similar fonts it finds.

Terri Stone



First past the post

Keep track of email away from the office. **By Shelly Brisbin**

You're in a hotel room in the middle of nowhere, using a PowerBook to catch up on your work email. You see a message from your manager asking about something you discussed in last week's project meeting. The nitty-gritty details you need are in an email exchange you had with your company's consultant yesterday while you were using your desktop machine at work. Will you go through a long, confusing hunt for the email messages, or will you be able to access them immediately? The answer depends on your level of email savvy.

Set up email on both Macs

First things first: to prevent confusion, designate one computer as your primary Mac (the one you use most of the time, probably your desktop machine or the one you use at your workplace) and the other (the one you use on the road or at home) as your secondary Mac.

Now make sure you can send and receive mail on both Macs using the accounts you'll want to read on both computers. You'll need to know your settings for each account: you can find them in your email program (under Accounts in Entourage's Tools menu or in Mail's Accounts preference pane). Enter the settings in your primary Mac if they aren't already there. Next, set up email access on your secondary Mac, using the same settings. You'll probably need to enter a different SMTP, or outgoing mail, server for the secondary Mac – that of your ISP at home, for example.

On the secondary Mac, select the option that removes messages from the server when you check your email (this may mean deselecting an option named Leave Messages On Server or something similar). Now, mail you receive on the secondary Mac won't be downloaded to the primary Mac upon your return. When you return, be sure the primary Mac is set to remove copies from the server, too. (In Mail, the option appears under the Advanced tab in the Accounts section; in Entourage, it appears under the Options tab in the Edit Accounts dialog box, which is accessible through the Accounts command.) There is an exception to this practice. It's always possible that mail will be lost or damaged. If that possibility concerns you, leave messages on the server until you back them up.

Put it all in one place

If you're travelling and will be away from your primary Mac for a couple of days or longer, you can ensure that you'll be able to access all your email messages and addresses by copying them to your secondary Mac via removable media, such as CDs, or your network.

Cordless Optical Mouse for Notebooks

rfMouseJr

PocketMouse SE

Mice for the road

Let's face it: sometimes your iBook or PowerBook's conveniently located trackpad isn't so comfortable, but a full-size mouse will eat up a lot of space in your laptop bag. If you're looking for an alternative, one of a new crop of tiny mice may suit you perfectly.

The Kensington PocketMouse SE (£20; **http://uk.kensingtoneurope.com**) is a stylish and small USB mouse with two buttons and a scroll wheel.

Macally and Logitech also make cable-clutter-free (read: wireless) mice with a transmitter that plugs into a USB port. The Macally rfMouseJr (£30; **www.ammicro.co.uk**) has an ingenious docking station you use with an AC adaptor; you can leave the docking station at home and instead use the included rechargeable batteries, which last for two to three weeks on a charge. The Logitech Cordless Optical Mouse for Notebooks (£39; **www.logitech.com**) uses regular AA batteries. The Kensington and Logitech mice come with their own tiny carrying cases. (Cordless mice for laptops are also available from Kensington.)
Jennifer Berger

Macworld.co.uk For the latest daily news, hot reviews, buyers' guide and special offers.

Bags of the month: STM

STM makes some of the most stylish laptop bags around, and the latest are colourful, practical and protective.

The 35-litre capacity **xl loop** (£99, including VAT) is a comfortable backpack, with tons of pockets. It has a movable false bottom, so any laptop will fit – even Apple's 17-inch PowerBook. The laptop section features a waterproof zipper. It's available in charcoal/black/red, or black/charcoal/light grey.

Curve (£69) is a 25-litre shoulder bag with a removable laptop sleeve for top protection, and is suitable for laptops with screens up to 15.5 inches.

Again there's loads of pockets and pouches. Like the loop, its high-density padding offers top protection from bumps. It's available in charcoal/blue/light grey, or charcoal/red/black.

STM's **xs drift** (£29) is a small (18-x-25-x-7cm) lightweight courier bag with a special iPod compartment. Other padded pockets will store mobiles/PDAs/cameras.

All include padded pockets for iPod, PDA, camera and phone, rubberized earphone access, and rubber handles to make it easy to carry by hand as well as slung over the shoulder. All fabrics are water resistant.

curve
loop
drift

STM distributed in the UK
by AM Micro, 01392 426 473

It's much easier to move your mail between the two machines if you use the same email program for each, because you can be sure the file formats don't conflict. To move email and its address book wholesale in Mail, copy and move Users/username/Library/Mail/ and Users/username/Library/Preferences/com.apple.AddressBook.plist to their corresponding places on your secondary Mac.

The downside to this method is that you'll overwrite your mail and addresses on the secondary Mac. If you have email on that Mac that you want to keep, save the relevant email boxes to another part of your hard drive, and then incorporate them into your mail program after you've overwritten the mail folder.

Moving your mail around in this piecemeal way is a little more difficult in Entourage because addresses and email are stored in one large file called the Entourage database.

So you'll want to drag-&-drop individual mail folders to your desktop or another place, then drag them to the secondary Mac's Entourage mail folder list. Then, export your contacts as text and import them into Entourage on the secondary Mac.

Moving mailboxes works best when you plan to be away from your primary Mac for some time. Your PowerBook or home Mac can function as your main email machine until you return to the primary Mac and reverse the process.

Mail strategies

Base your multi-Mac email strategy on three criteria: how long you'll be away from your Mac, how much of your email you need to work with while away, and which email client you'll use.

	IF YOU WANT TO:	
Your email client	**…use your email on an iBook or PowerBook for an extended period of time, and transfer everything to your main Mac when you get home:**	**…access all your email on both machines a couple of days a week or with little notice:**
Entourage	Use POP, deselect Leave A Copy Of Each Message On Server in Accounts, and import messages.	Use IMAP or Web mail.
Mail	Use POP, select Remove Copy From Server After Retrieving A Message in the Accounts section of the Preferences pane, and copy and move Users/*username*/Library/Mail/ and Users/*username*/Library/Preferences/com.apple.AddressBook.plist.	Use IMAP or Web mail.
Eudora	Use POP, deselect Leave On Server in the Checking Mail or Personality Extras section of Settings, and copy and move contents of Users/*username*/Documents/Eudora Folder/.	Use IMAP or Web mail.
Mailsmith	Use POP, deselect Leave Mail On Server in the Checking tab of the email Accounts pane, copy Users/*username*/Mail/Mailsmith User Data, or use the Export Mail command.	Use Web mail (Mailsmith does not support IMAP).

Which protocol?

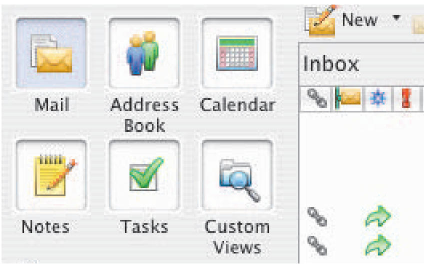
All this is fine if you'll be away from your primary Mac for a while, but it's probably too much trouble if you just work at home a couple of days per week. In that case, you may want to change email methods. POP, a commonly used protocol, copies or moves messages from a server to your computer. It isn't the best choice all the time for emailers on the go because, as we've shown, it takes some time and effort to move mailboxes between two Macs.

If you need quick access to your email all the time, you might want to use IMAP, which stores your messages on a server that you connect to when you want to access your mailboxes.

Since messages don't reside on your computer as they do with POP, you can view them from any Mac or email client, download them to your Mac if you want, or leave them on the server for later access. The downsides are that many IMAP servers let you store only 5MB to 15MB of email, so you have to keep an eye on how much space you're using; IMAP isn't available from all companies and ISPs; and if you store your mail on the IMAP server, you must be connected to the Internet to read it.

If you have to suddenly leave town or are unexpectedly home sick (but not too sick to check email), another method, Web mail, can be a truly convenient fix.

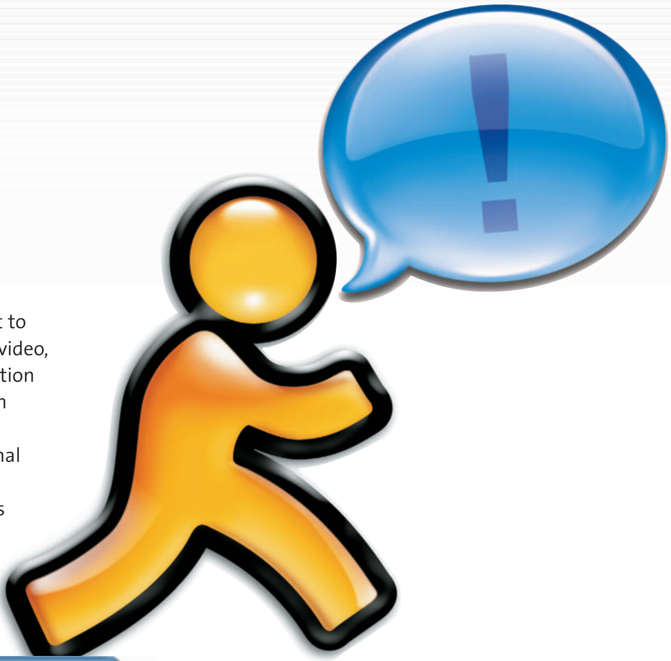
Many ISPs let you access your account via the Web, but the drawbacks are that you can't use any of the filters, rules, or spam catchers you use with your mail application; the interfaces are often poorly designed; you can't import either your existing mail or your address book; and you must be connected to the Internet to see your email. **MW**



If you use two email programs, you'll need to import mail into your secondary Mac's email client, rather than simply copying mail from one place to another. The best mail-import features belong to Mail and Entourage, both of which can bring in messages from Eudora, Netscape, Outlook Express, and Claris Emailer, among others. If you use another client, visit **www.emailman.com/conversion** to find utilities for importing email from various programs.

Chat show

iChat questions answered. By Rob Griffiths



Move over, Dick Tracy. Although it may be a while before most of us get our hands on a two-way wrist TV, the latest in instant-messaging technology can get Mac users awfully close. Text-based instant messaging (IM) has long allowed people to carry on conversations that are more interactive than email exchanges but less intrusive than phone calls. Now you can get iChat AV (**www.apple.com/ichat**) with Apple's Panther OS X update. (Jaguar users can purchase iChat AV for £20 including VAT.)

Use it to leapfrog the telephone and interact visually and vocally. While you may have to rethink chatting with your buddies while wearing footed pyjamas, IM offers a fun way to stay in touch with friends and family, and it creates new possibilities for work.

Ready, set, iChat!

iChat AV can deliver nearly 30 frames per second – close to video quality. To get this frame rate, you'll need a FireWire video camera (see Reviews, January 2004), a reasonably fast Mac (a 600MHz G3 or better), and a high-speed Internet connection.

Even if you don't have a FireWire video camera, all hope is not lost. Thanks to the iChatUSBCam Application Enhancer module, from ecamm ($10; **www.ecamm.com/mac/ichatusbcam/**), you may be able to use your old USB webcam. Keep in mind that you may not get the same frame rate and image quality.

iChat AV makes audio and video chatting easy. A quick look at the program's Buddy List window shows everyone's audio and video capabilities. To initiate a connection, just click on the camera or the phone icon.

Beyond the basics

But what if you want to do more? I've got answers about using iChat's lesser-known features and trying other chat software.

Do I need a high-speed connection for video-conferencing?

Yes, although a 56K or better modem is all you need for audio chats. If you don't have a high-speed connection but want to experiment with nearly real-time video, you can use a webcam application such as Evological's EvoCam ($20; **www.evological.com/evocam.html**) or International Web's Oculus ($20; **www.intlweb.com**). These programs let you upload images to a server (or serve them to the Net via a built-in server) at regular intervals that you set.

Can I have an audio or video chat with someone who doesn't have a microphone or camera?

Strangely enough you can, but it will be a one-sided conversation. Control-click the user's name in the Buddy List window, and then select Invite To One-Way Audio (or Video) Chat. Once the chat has been established, you can send audio or video, but your buddy will be able to reply only with text.

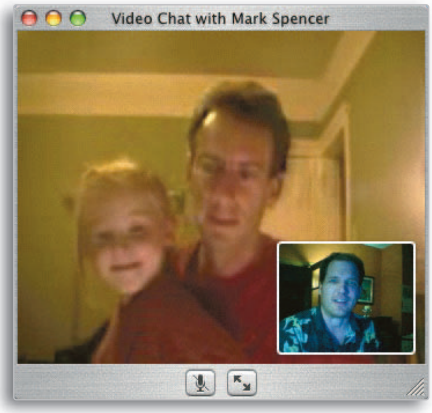
You can even use this feature to send prerecorded video across the Net. Plug your video camera into your Mac, turn the camera on, and set it to playback mode. Start a one-way chat with another user (it also works for two-way chats), and then press play on your video camera. The other user will receive your recorded audio and video directly. This is a great way to share video footage with friends and family, as it spares them a lengthy download.

Can I use iChat to chat with more than one person at a time?

There are two ways to create a multiuser iChat. First, you can create a chat room by choosing File: Go To Chat. Choose a unique name, and send a regular chat message or email telling your buddies to enter that name in their Go To Chat dialog box.

Alternatively, while chatting with one buddy, select Show Chat Participants from

continues page 94



Forget the phone
Once you've enjoyed using iChat's video-conferencing feature, a phone call just won't do when you want to chat with distant friends or family members – and really see how they're doing.

Serious chat

So you think chat is only for hackers and teens? Consider using it at work.

- Hold text-based meetings with employees in multiple locations. Create group chats for discussing team strategies, product-launch plans, or just where to meet for lunch.
- Provide technical support via video chat to show company representatives' friendly faces, and grab screen images to help diagnose and solve problems.
- Demonstrate a product to a potential customer, showing the actual product in use as you put it through its paces.
- Use the Mac's built-in microphone and iChat AV to place free phone calls to other iChat users.
- Install a program – such as Kanex Group's QuickPopup ($50; **www.macpopup.com**) or Glass Bead Software's SnapTalk ($29; **www.glassbead.com**) – that lets you send messages (without using an outside central server) between users on your office's local area network. QuickPopup runs on Macs and Windows PCs; SnapTalk includes automatic replies and the ability to send files back and forth.
- Install CE Software's QuickConference and InOutTracker ($120 and $60, respectively; **www.cesoft.com**) to enable multiuser text conferences, and create an electronic in-and-out board to show employees' whereabouts.
- Consider using an integrated Web-based service such as Netspoke (**www.netspoke.com**) or Caststream (**www.caststream.com**) to present audio and video in a live, interactive session over the Internet.

the View menu. Then click on the plus sign (+) at the bottom left and choose another buddy from the resulting pop-up menu.

Can OS 9 and OS X users chat ?

For basic text chat, the answer is an unqualified yes. If you're using iChat, you can chat with anyone using AOL Instant Messenger, or AIM (free; **www.aim.com**), because iChat is based on the AIM protocol. Many other chat clients have OS 9 and OS X versions, including Yahoo's Yahoo Messenger (free; **http://messenger.yahoo.com**) and ICQ's ICQ (free; **http://web.icq.com**).

If you want audio and video chat, however, the options are more limited. iVisit (Lite version, free; Plus version, $25 per year; **www.ivisit.com**) allows video chat between OS 9 and OS X users.

Can Windows users hold audio or video chats with Mac users?

Until recently, iChat's audio and video features allowed only Mac users running iChat AV to have two-way chats. However, Apple's iChat AV 2.1 beta now supports video conferencing with others using AOL Instant Messenger 5.5 for Windows XP.

Or, check out iVisit and SquidSoft's SquidCam ($25; **www.squidsoft.com**) if you want to hold video or audio conferences with Windows users. These programs aren't as easy to set up as iChat AV, but they'll do the trick. If you use iChat AV, text-based chatting with Linux and Windows users is no problem if they use a chat client that supports the AIM protocol.

Can I have audio and video chats or transfer files if I'm behind a firewall?

In most cases, yes – if you (or your system administrator) can open certain ports in the firewall. In particular, UDP port 5060 and ports 16384 to 16403 must be open for audio and video chats, and port 5190 must be open for file transfer.

At home, you need to configure your router to open the required ports, so data can pass through them. Apple provides two Knowledge Base articles that explain the steps in greater detail. For audio and video instructions, see **http://docs.info.apple.com/article.html?artnum=93208**. For instructions on transferring files, see **http://docs.info.apple.com/article.html?artnum=107476**.

Can I record iChat conversations?

You can log text chats by selecting the Automatically Save Chat Transcripts option in the Messages section of iChat's preferences. To capture an audio chat, you need an application such as Ambrosia Software's WireTap (free; **www.ambrosiasw.com**) or Rogue Amoeba's Audio Hijack ($16; **www.rogueamoeba.com**).

Ambrosia's $49 Snapz Pro X can capture a screen movie, but it captures only your audio, not your chat partner's. If you need to get a high-quality capture of an iChat video chat, set up a separate video camera to record your screen and ambient audio. If you have an LCD display, this can look great.

Where can I find more information about video-conferencing on OS X?

Check out John Kenn's site at **homepage.mac.com/john_kenn/video.html**.

Share your whiteboard

Brainstorm with clients and coworkers, both near and far, with the help of Luidia's eBeam System 3 wireless with Bluetooth technology (£1,549; **www.e-beam.com**). This combination of gadgets and software lets you record or share anything you scrawl on a whiteboard. Notes, diagrams, sketches, and flowcharts appear on remote computers as you write. You can even use some PDAs to watch the show. All you have to do is pop a special receiver onto the corner of your whiteboard, plug it into a power outlet, and start up the software on your PowerBook. The eBeam's use of Bluetooth technology makes setup a quick and cordless affair.

Scholle Sawyer McFarland

Terminal’s new twist

How to get up to speed with Panther’s new Unix shell. **By Kirk McElhearn**

Panther brings plenty of changes to keep users on their toes. And command-line users found a major one: Apple switched the default shell used with Mac OS X from tcsh to bash. This change affects new accounts created in Panther. (If you upgrade from Jaguar and you were using tcsh, you won’t see any difference.)

The shell switch won’t affect you if you use Terminal to navigate your file system or issue the occasional command. But if you use the command line regularly, and especially if you’ve customized tcsh with shell variable settings and shell aliases, you’ll need to change these settings – bash stores them in different files, and the way you modify the items is different as well.

Sound like a pain? You can easily continue using tcsh (see “Swap your shell”), but there are advantages to bash. For example, it offers editing modes that use commands similar to the main Unix text editors (emacs and vi), as well as the ability to edit commands in your command history. Also, if you plan to do shell scripting, bash is a much better choice than tcsh: it’s a more common standard, and you’ll find plenty of shell scripts for bash on the Web. First of all, you need to get up-to-speed with bash basics.

Which files bash reads

Every shell reads a certain set of files for setup and configuration information. (This is somewhat akin to regular applications reading preference files.) The bash shell reads the following files in this order:

`/etc/profile`: This file contains systemwide environment and startup commands and variables, including the default `PATH` variable. In OS X 10.3 (Panther), this file contains the following:

```
# System-wide .profile for sh(1)
PATH=”/bin:/sbin:/usr/bin:/usr/sbin”
export PATH
[ -r /etc/bashrc ] && source /etc/bashrc
```

This tells the bash shell what default search path to use when looking for commands, and then tells it to source, or read, the `/etc/bashrc` file.

`/etc/bashrc`: This file contains systemwide functions and aliases, including the shell prompt. Under Panther, this file contains the following:

```
# System-wide .bashrc file for interactive bash(1) shells.
PS1=’\h:\w \u\$ ‘
# Make bash check its window size after a process completes
shopt -s checkwinsize
```

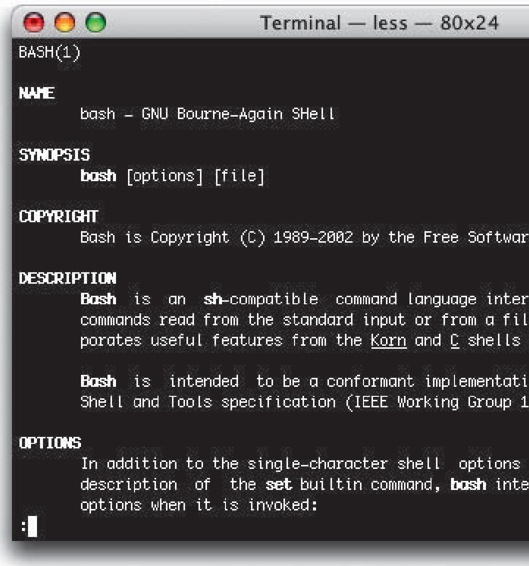
This sets the prompt and tells bash to check its window size after processes complete.

The bash shell then reads one of the three following files: `~/.bash_profile`, `~/.bash_login`, or `~/.profile`.

The bash shell reads *only one* of these files, and it looks for them in that order. Once it has found one of these files, it reads the contents and then skips the remaining files in the list. You can use any of these files to define environment and configuration settings, but make sure you use only one of them. For this reason, `~/.bash_profile` is safest to use, since it’s the first file bash looks for. This is where you should put your aliases and variables. It’s the equivalent of the `~/.tcshrc` file under the tcsh shell.

Bash reads `~/.bashrc` if you launch it as a non-login shell (if you type `bash` at a Terminal

continues page 98



```
BASH(1)

NAME
       bash - GNU Bourne-Again SHell

SYNOPSIS
       bash [options] [file]

COPYRIGHT
       Bash is Copyright (C) 1989-2002 by the Free Softwar

DESCRIPTION
       Bash  is  an  sh-compatible  command language inter
       commands read from the standard input or from a fil
       porates useful features from the Korn and C shells

       Bash  is  intended  to be a conformant implementati
       Shell and Tools specification (IEEE Working Group 1

OPTIONS
       In addition to the single-character shell  options
       description  of  the set builtin command, bash inte
       options when it is invoked:
:
```

Swap your shell

While Apple has chosen bash as the default shell for new accounts under Panther, you can use any shell you want. Keep tcsh, or use ksh, zsh, or others. There are two ways to do this. The easy way to do it is to change your Terminal preferences.

You can change your shell more permanently by using the `chsh` command.

Run the command as follows:

```
chsh -s /bin/tcsh username
```

This changes the shell directly in the NetInfo database, and the next time you open a new Terminal window, Panther uses this new shell. You don’t need to quit Terminal for the change to take effect.

More info about bash

- Type man bash in Terminal to see the program’s man (manual) page.
- Check out the bash shell’s home page (**www.gnu.org/software/bash/bash.html**).
- Learning the bash Shell, by Cameron Newham and Bill Rosenblatt (O’Reilly, 1998), is the only book that focuses entirely on bash.

prompt, for example, and launch a bash session in that manner). If you plan to use it as a non-login shell, consider duplicating any aliases or variable settings here.

The handy PATH variable

Apple includes a PATH variable setting in the /etc/profile file: PATH=”/bin:/sbin:/usr/bin:/usr/sbin”. It tells the shell where to look for commands you type in Terminal.

You can add directories (separated by colons) to this variable by adding the following line to your .bash_profile file: PATH=$PATH”:*directory1:directory2:directory3*”.

Why would you want to? This is a handy shortcut if you have command-line tools in other locations or if you have your own shell scripts in your Home directory. For example, I have a bin directory in my Home directory, so I add it to the PATH variable by including the following: PATH=$PATH”~/bin”.

You can check your PATH variable when you start up a new bash session by typing the following: echo $PATH. This returns a line showing all the directories in the PATH variable.

Shell and environment variables

Shell and environment variables let you set certain options, such as protecting files against overwriting, or turning on the spelling checker when typing directory names.

The bash shell uses the set and shopt commands to turn variables on and off and to set their values. If you run the set command alone, bash returns a list of all variables that have been set for you. Some of these come from bash and its configuration files; others come from different parts of OS X (such as your user name, home directory, user ID, and so forth). To see which options can be changed with the set command, run the following: set -o. To set one of these options, use the following: set -o *option name*. To unset one of these options, run this: set +o *option name*.

The options available with the set command allow you to customize the shell environment. One useful option is the noclobber variable. It tells the shell not to overwrite existing files when redirecting output to a file. You can turn this on by running the following: set -o noclobber.

The bash shell offers another group of options that you can set and unset using the shopt command. To see a list of these options and their status, run shopt-p. Options with -s before their names are turned on, and options with -u before their names are turned off.

To set one of these options, run this command: shopt -s *option name*. And to unset an option, run shopt -u *option name*.

One useful option you can turn on in this way is the cdspell option. If you turn this on, the shell tries to correct spelling errors when you run the cd (change directory) command followed by the name of a directory. Set this option as follows: shopt -s cdspell.

Finally, bash offers a group of environment variables, which you can set using the export command. You’ve already seen one example, in the /etc/profile file, when I set the PATH variable. You can either use the form in that example, or you can set environment variables such as this one: export variable=value.

The ultimate shortcut: shell aliases

Shell aliases are shortcuts for commands you run in Terminal. You can set aliases for any commands, whether they’re short and simple or long and complex. Aliases are like keyboard shortcuts. At any time, you can see which ones you’ve set by running the alias command with no arguments.

With bash, aliases are set as follows:

```
alias l=ls
alias ls=’ls -lF’
```

These two examples set aliases for the ls command, which lists files in a directory. In the first example, no quotes are necessary since the command you’re aliasing has no options or arguments. But if you want to alias a longer command, such as the second example (which creates a detailed list of files that includes file types), you need to use single quotation marks around it.

If you’re ready to switch from tcsh to bash, now you have the basics. Transfer all your settings and aliases to the appropriate files, and get a grip on bash in just a few minutes. **MW**

Geek favourites

Gizmodo : The gadgets weblog
Gizmodo : The gadgets we...
THE GADGETS WEBLOG
GIZMODO
search
TAZ I from tight
Tuesday, November 04, 2003
Categories
PDAs
Home Entertainment
Laptops/PCs
Digital Cameras
Wireless
Portable Audio
Cellphones
Peripherals
Software
Announcements
Misc. Gadgets
Laika

Nokia’s new Bluetooth accessories #
Category: Cellphones

The Nokia avalanche continues this week, with a few new Bluetooth products due out early next year: the HS-4W wireless headset (pictured at right), the Nokia 610 Bluetooth Car Kit (which has an LCD display for caller ID), and the AD-5B Wireless Audio Adapter for adding Bluetooth to phones that don’t already have it built-in.
Read

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Fight bogus cellphone "portability" charges #
Category: Cellphones

If you love gadgets, get your daily fix at Gizmodo (**www.gizmodo.com**). This Weblog gathers news, commentary, and analysis about all things gadget-related and organizes it neatly into categories.
Scholle Sawyer McFarland

• Resetting a G4 • Cursor-size changes • Safari tabbed browsing

Mac Help

Handy tips and readers' questions answered. **By Christopher Breen and Rob Griffiths**

Boot camp

Q **I'd like to create bootable copies of my Mac OS X 10.3 installation discs for backup. How do I do this in Panther?**

Terry Byers

A In earlier versions of OS X, you did this with Disk Copy, but in Panther, Disk Utility does the job. To copy your discs, follow these steps:

1. Launch Disk Utility (in Applications: Utilities).

2. Insert the first Panther CD, and when its icon appears in the left side of the Disk Utility, select Mac OS X Install Disc 1.

3. Click on the New Image button at the top of the Disk Utility window and, in the resulting sheet, name the file (Panther 1, for example); then select DVD/CD Master from the Image Format pop-up menu. Don't change the None setting in the Encryption pop-up menu.

4. Click on Save and eat half a snack while Disk Utility creates an image of the disc.

5. Select the image and click on the Burn button.

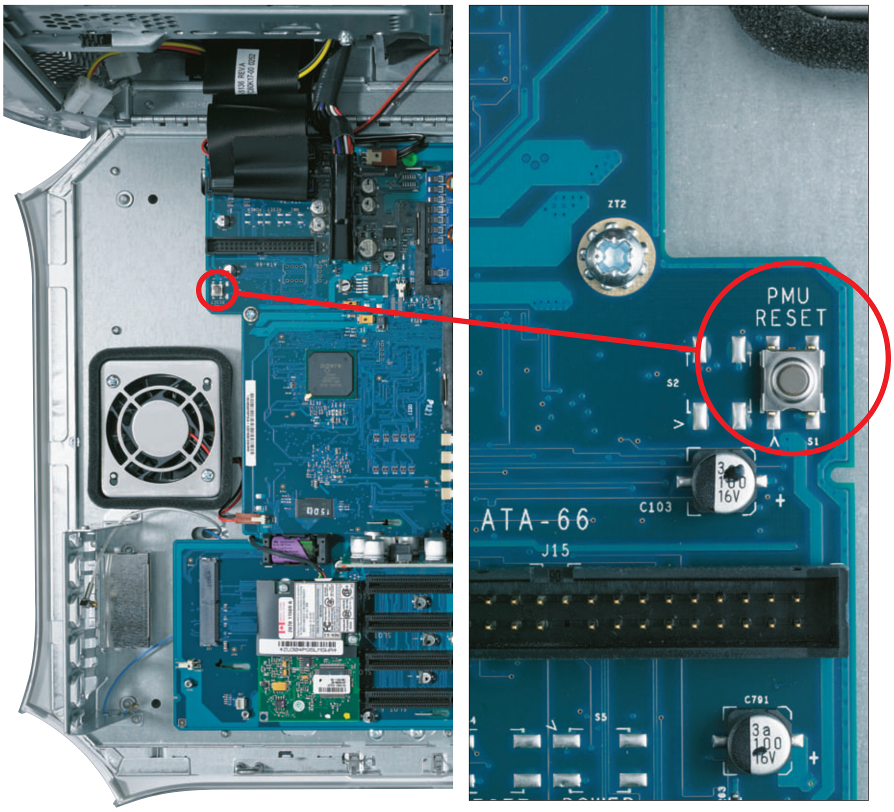
6. Insert a blank CD and enjoy the other half of your snack while Disk Utility burns and verifies your disc.

7. Repeat for the other discs you want to back up.

Use a second monitor for DVDs

TIP If you have two monitors, Apple's bundled DVD Player is now smart enough to put the second one to good use. In OS X releases before 10.3, DVD Player would use only the primary display (the one with the menu bar) for DVD playback. In OS X 10.3's DVD Player, just drag your movie from the primary display to the secondary one, and you'll see a Switching Video To New Screen overlay appear in your movie window.

There, you can use DVD Player to play the video at full-screen size by selecting the Video: Enter Full Screen menu option. But if you then click on another application or on the Finder, DVD Player shrinks the movie down to Maximum Size. If you'd prefer that DVD Player leave the movie in full-screen mode, just open DVD Player's Preferences, click on Full Screen, and then select the Remain In Full Screen When DVD Player Is Inactive option. Now you can play a full-screen movie on your second monitor while you work on your primary monitor.



Time for resets

Q **There was a power failure in my neighbourhood while my Power Mac G4 was plugged in. I unplugged it until the power returned, but when I plugged it back in it wouldn't start – the button glowed when I pushed it, but I heard no activity from the computer. Is it dead?**

Kerin Tyrrell

A Probably not. This has happened to my Power Mac G4 when the lights have gone out, and I've put things right by pressing the PMU reset button, which is located on the Mac's motherboard (above) – its exact location varies depending on which Power Mac you own. Pushing this button resets the Power Management Unit and usually allows the Mac to start up.

The Apple-recommended method for performing this operation is to unplug the power cord and press the PMU reset button only one time (pressing it more than once could keep the PMU chip from responding and reduce the internal battery's life from five years to two days). Wait ten seconds, plug the Mac back in, and then press the power button.

After resetting the PMU, it's also a good idea to reset the Mac's nonvolatile RAM (NVRAM). To do so, shut down the Mac and restart while holding down ⌘-option-P-R. Continue to hold these keys until you hear the startup sound twice. Let go, and the Mac will continue to start up. After resetting the PMU and NVRAM, use System Preferences to verify your time zone, startup volume, and volume settings.

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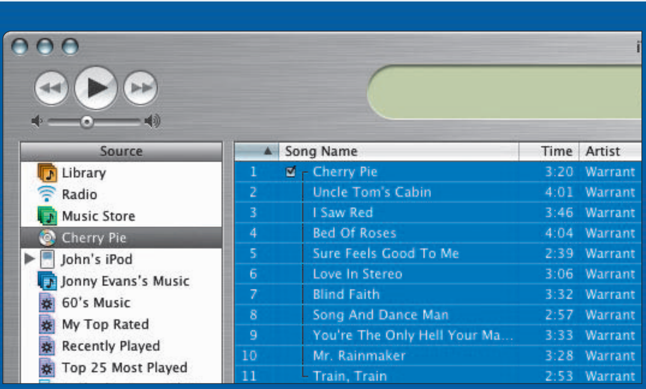
Linking multiple tracks in iTunes

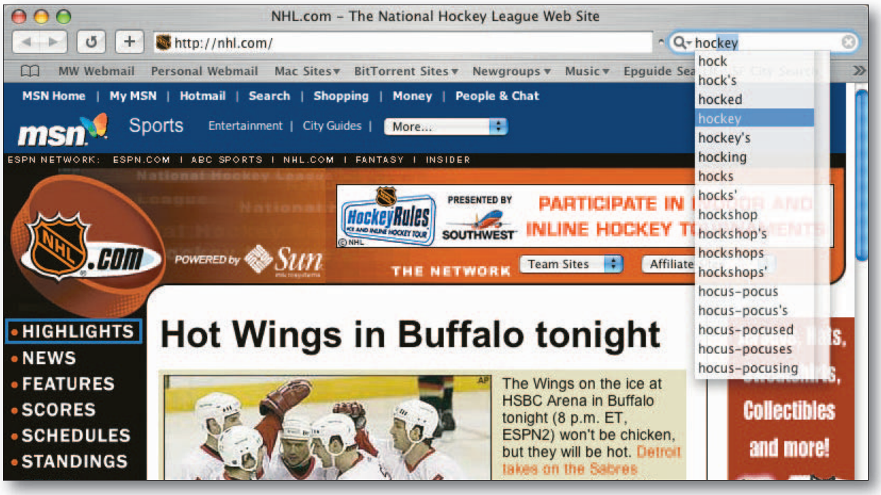
TIP In the January 2004 Mac Help column ("Missing link"), you suggested using iMovie to string together iTunes songs into a single track that could be played behind an iPhoto 2 slide show. Here's another way to create a single track from multiple songs:

In the Burning tab of iTunes' Preferences window, select Audio CD as the disc format and set the desired gap between songs. Now create a playlist with the tunes that you'd like to accompany the slide show. Burn the playlist to a CD.

From iTunes' Source list, select the CD you just burned and select all the songs on it. From the Advanced menu, choose Join CD Tracks and then click on the Import button. All the joined tracks – which must be consecutive tracks on the CD – will be imported as a single track that you can use as the audio background for your slide show.
David Martin


Source
Library
Radio
Music Store
Cherry Pie
John's iPod
Jonny Evans's Music
60's Music
My Top Rated
Recently Played
Top 25 Most Played

	Song Name	Time	Artist
1	Cherry Pie	3:20	Warrant
2	Uncle Tom's Cabin	4:01	Warrant
3	I Saw Red	3:46	Warrant
4	Bed Of Roses	4:04	Warrant
5	Sure Feels Good To Me	2:39	Warrant
6	Love In Stereo	3:06	Warrant
7	Blind Faith	3:32	Warrant
8	Song And Dance Man	2:57	Warrant
9	You're The Only Hell Your Ma...	3:33	Warrant
10	Mr. Rainmaker	3:28	Warrant
11	Train, Train	2:53	Warrant


NHL.com – The National Hockey League Web Site
http://nhl.com/
hockey
MW Webmail
Personal Webmail
Mac Sites
BitTorrent Sites
Newsgroups
Music
Epguide
MSN Home | My MSN | Hotmail | Search | Shopping | Money | People & Chat
msn Sports
Entertainment | City Guides
NHL.com
HockeyRules
PRESENTED BY SOUTHWEST
PARTICIPATE IN INLINE HOCKEY
POWERED BY Sun
THE NETWORK
Team Sites
HIGHLIGHTS
NEWS
FEATURES
SCORES
SCHEDULES
STANDINGS
Hot Wings in Buffalo tonight
Collectibles and more!
hock
hock's
hocked
hockey
hockey's
hocking
hocks
hocks'
hockshop
hockshop's
hockshops
hockshops'
hocus-pocus
hocus-pocus's
hocus-pocused
hocus-pocuses
hocus-pocusing

The Wings on the ice at HSBC Arena in Buffalo tonight (8 p.m. ET, ESPN2) won't be chicken, but they will be hot. Detroit takes on the Sabres

Word wizard
Can't quite recall a certain word? Just type the first few characters into any Cocoa application and press Option-escape to see a list of possible completions.

View suggested word completions

TIP When you're working in a Cocoa application, such as TextEdit, Safari, or Mail, you can use Panther's new autocompletion feature to find that certain word that's just itching to flow from your fingertips. Enter the first part of a word anywhere you can type – say, in the Google search box in Safari or anywhere in a TextEdit document – and then press the Option and Escape keys at the same time. You'll find a list of possible completions for the current word fragment (see "Word wizard," above).

Open and Save dialog boxes

TIP Mac users (and Windows switchers) will appreciate Panther's time-saving additions to the Open and Save dialog boxes. One of these new features is reminiscent of Windows – when you click on the name of an existing file in a Save dialog box, the file you are about to save will assume that name. You can then overwrite the existing file (OS X will provide a warning to make sure you want to do so), without having to retype the name.

Another change relates to navigating your hard drives from the Open and Save dialog boxes. In OS X 10.2 and earlier, you could use the Go To field to type in a path to another folder on your hard drive – OS X 10.3 lacks this field. You can still use the shortcut, though.

To jump quickly to any folder anywhere on your system, press ⌘-shift-G (it's the same sequence as for the Finder's Go: Go To Folder command) in the Open or Save dialog box. When the new window opens, type the path to the folder you want to reach, and then press enter. You can even press the tab key to autocomplete entries and avoid some typing (just as in Terminal).

You can now navigate the Open and Save dialog boxes' file listings by typing the first letter of any item in the list. For instance, to go to your Documents folder, make sure that you're looking at your Home directory and that the file list area of the Open or Save dialog box is active, and then type do to highlight the Documents folder.

Relocalizer

Q **I used Mike Bombich's Delocalizer (http://software.bombich.com) to remove extraneous language files from my hard drive. It turns out that one of my Microsoft Word files includes a letterhead that contains foreign characters – characters that no longer appear. How can I restore language files?**
Larry Grossberg

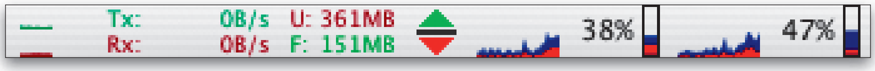
A Both Jaguar and Panther include language files you can install with a simple double-click. If you have the multidisc Jaguar installation set, you'll find these files in the Optional Installs folder on the first disc. If you received Jaguar on a single DVD, the Optional Installs folder is inside the Welcome To Mac OS X folder, which may be invisible.

If you don't see it, download a copy of Marcel Bresink's free TinkerTool (**www.bresink.com/en/index.html**), launch it, select the Finder button, enable the Show Hidden And System Files option, and click on Relaunch Finder. You'll now be able to see the Welcome To Mac OS X folder. (Because invisible files are invisible so you won't accidentally delete them, be sure to use TinkerTool to make your files invisible again when you're done.)

Restoring language files is much easier in Panther. Insert the second Panther CD, open the Packages folder, and double-click on the Languages.mpkg item. The Install Language Translations installer will open. After selecting a destination for the installed files, click on Continue to move to the Easy Install screen.

Click on that screen's Customize button to view a list of all the language files you can install or upgrade. Deselect the languages you don't want to install, and click on Install. When you're asked for it, enter your administrator's password and click on OK.

Keeping an eye on it
MenuMeters lets you keep track of a Mac's activities


Tx: 0B/s
Rx: 0B/s
U: 361MB
F: 151MB
38%
47%

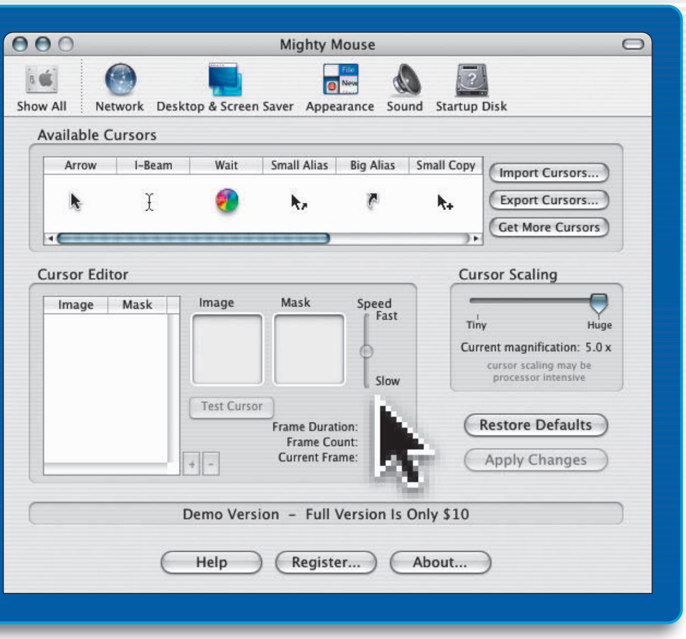
Changing cursor size

Q Because I'm visually impaired, I have great difficulty in seeing the small cursor on my Macintosh PowerBook G3. Can you tell me how I might solve this problem?

David Herbert Donald

A If you're running Mac OS X, I suggest that you download a copy of Unsanity and Geekspiff's $10 Mighty Mouse (**www.unsanity.net/mightymouse-112.dmg**). In addition to allowing you to customize the appearance of your cursor, this haxie lets you increase or decrease the size of Mac OS X's cursors -- from really tiny to astoundingly big.

If you're using Mac OS 9, check out RJ Cooper's $29 Biggy-Light (**www.rjcooper.com/biggy-light/index.html**). It's less expansive than Mighty Mouse in that it includes a limited number of cursors and only doubles the size of those cursors.


Mighty Mouse
Show All
Network
Desktop & Screen Saver
Appearance
Sound
Startup Disk
Available Cursors
Arrow
I-Beam
Wait
Small Alias
Big Alias
Small Copy
Import Cursors...
Export Cursors...
Get More Cursors
Cursor Editor
Image
Mask
Image
Mask
Speed
Fast
Slow
Test Cursor
Frame Duration:
Frame Count:
Current Frame:
Cursor Scaling
Tiny
Huge
Current magnification: 5.0 x
cursor scaling may be processor intensive
Restore Defaults
Apply Changes
Demo Version – Full Version Is Only $10
Help
Register...
About...

Size is everything
Haxies such as MightyMouse let you change cursor size and appearance.

Master Activity Monitor

TIP Activity Monitor is an Apple utility (found in Applications: Utilities) that can help you diagnose system problems, kill stalled programs, and examine CPU and memory usage in Panther. Activity Monitor is a more powerful replacement for Process Viewer, included in OS X 10.2 and earlier.

One neat feature in Activity Monitor is the ability to view all processes in a hierarchical tree. Select All Processes, Hierarchically from Activity Monitor's pop-up menu, and you can see which tasks spawn subtasks, such as the pmTool program that Activity Monitor launches. Without this view, you'd see pmTool listed alone, and you might decide to quit it since you don't know what it is.

Another useful feature is the Inspect button in the toolbar. Select an application in the list and click on the Inspect button, and you'll see a new window full of information that only a programmer could love – or so you might think. The Inspect window contains detailed data on memory usage, thread usage, page-ins, CPU time used, and much more.

Why should you care about all this? If you have an application that seems to be out of control (for example, if Photoshop becomes unresponsive when you try to open a new file), switch over to Activity Monitor while the app is stuck, select the application in the list, and click on the Inspect button. In the new window, click the Sample button to get a snippet of the code that the application is running.

While 99 per cent of this window's content probably looks like gibberish, these tidbits can help you diagnose the cause of the problem – Photoshop may be trying to find a file on a network server you've recently disconnected, for instance.

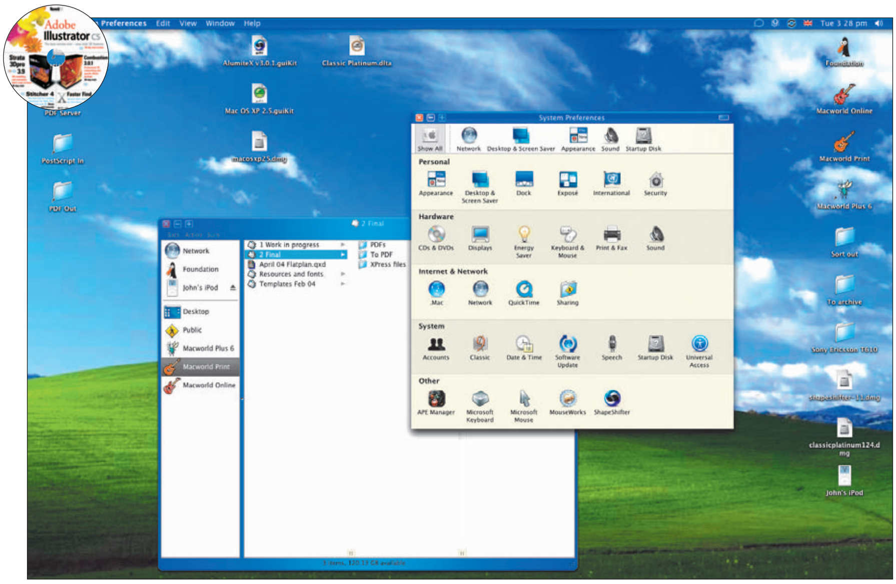
You won't need this feature often, and you probably won't understand most of the stuff in there, but keep it in mind for when you need troubleshooting assistance.

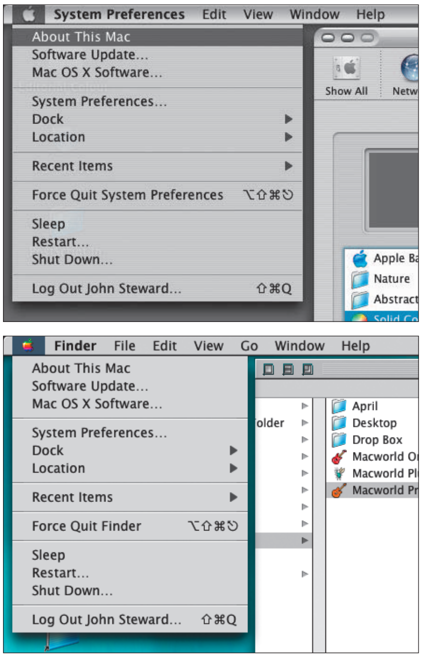
If you enjoy this kind of technical knowledge, control-click Activity Monitor's Dock icon to make it display memory or CPU usage, disk activity, or network activity. Or, check out the free MenuMeters (**www.ragingmenace.com/software/menumeters**), which can display information about all of these items in your menu bar, in OS X 10.3 and earlier.

Colour colour colour colour colour chameleon...

TIP At the risk of injuring the feelings of Apple's Panther user-interface team, I have to admit that I find Panther's metallic Finder windows overbearing and unattractive. Because I do, I've scrounged the Web for tools that banish any trace of metal from my otherwise attractive OS.

One such tool is the free Whiteout, available from **www.versiontracker.com**. It replaces the system resource that brushes the metal appearance in the Finder, iChat, iCal, and Safari (sorry, iTunes


Adobe Illustrator CS
Preferences
Edit
View
Window
Help
System Preferences
Personal
Hardware
Internet & Network
System
Other


System Preferences
Edit
View
Window
Help
About This Mac
Software Update...
Mac OS X Software...
System Preferences...
Dock
Location
Recent Items
Force Quit System Preferences
Sleep
Restart...
Shut Down...
Log Out John Steward...
Show All
Finder
File
Edit
View
Go
Window
Help
About This Mac
Software Update...
Mac OS X Software...
System Preferences...
Dock
Location
Recent Items
Force Quit Finder
Sleep
Restart...
Shut Down...
Log Out John Steward...
April
Desktop
Drop Box

Say it ain't so!
Shapeshifter can make Panther take on the appearance of your choice, from edgy aluminium (above, right), classic Mac OS 9 (right), or even – horror of horrors – Windows XP!

continues page 214

Safari tip of the month: Addicted to tabs

Q **I like to view the same set of sites as tabs in Safari when I launch the program. But when Safari launches, I have to set up my tabs again. Is there any way to have the tabs load automatically?**

Paul Schutte

A Almost. Here's what I'd do: Launch Safari and select Preferences from the Safari menu. Click the Tabs option, enable the Enable Tabbed Browsing and Always Show Tab Bar options, and close the Preferences window.

Click the Bookmarks button and in the resulting window select the Bookmarks Bar entry in the Collections column. Click the Plus button that appears below the list of bookmarks in the Bookmarks Bar to add an untitled folder. Give the folder a name such as AutoStartup and copy the addresses for the Web sites that you routinely view into this folder.

Click the Auto-Tab option next to your new AutoStartup folder and click the Bookmarks button to dismiss the Bookmarks window. You'll notice that an AutoStartup entry now appears in your Bookmarks Bar (if you don't see a Bookmarks Bar, press ⌘-B or choose View: Bookmarks Bar to reveal it). Next to this entry is a small square. This square indicates that the entry will use the Auto-Tab feature.

And what exactly does this feature do? Although it won't automatically load all the Web sites you desire when you launch Safari, it puts you in the ballpark. Just click AutoStartup and your sites will load in separate tabs.

For more information on tabbed browsing, see this Apple KnowledgeBase document: **http://docs.info.apple.com/article.html?artnum=32451**

is still metallic) with a modified version of the resource that creates off-white, dimly pinstriped windows.

If you'd like your Mac to sport a wildly different appearance, check out Unsanity's $20 ShapeShifter (**www.unsanity.com/haxies/shapeshifter**), which allows you to apply themes to Panther's interface. Changing more than Finder windows, these themes alter the appearance of windows, menus, buttons, scroll bars, and sliders.

A bit about Windows

TIP I apologize in advance for offering a Windows-centric tip, but this one stumped me for long enough that I thought it worth passing along. Here's the setup:

I have a PC running Windows XP Home Edition and although I could make my Macs see the PC, the PC refused to recognize my Macs running Panther. After mucking with various network settings on the PC and Macs I decided to check the SMB sharing settings in the Directory Access utility (found inside the Utilities folder).

It's a lucky thing I did because when I selected SMB in the Services tab and clicked the Configure button, I discovered that the Workgroup entry in the resulting sheet read WORKGROUP (Windows' default workgroup name). Because my PC's workgroup is called MSHOME (the default name for a workgroup created with Windows XP Home Edition), the PC couldn't locate the Macs. Changing the Workgroup name in Directory Access to MSHOME made my Macs available to the PC.

Blame game

Q **What is it about games that, when they crash, OS X locks up completely? If my other applications go belly up, I can force-quit that application and the OS keeps on truckin'.**

Todd Harding

A Games that perform slowly stink. To produce games that don't stink, programmers employ various forms of trickery to pull as many resources from the Mac and its video card as possible. Because a game demands so much from your computer, if something goes wrong, your Mac may not be able to back out from it gracefully.

Glenda Adams – Aspyr Media's director of PC and Mac development – confirmed that games often push settings higher than a video card can handle, thus not leaving enough for the OS to politely exit if the game crashes. All is not lost, however. Adams passed along this hint:

Sometimes the Force Quit command works even if you can't see the dialog box. Try pressing ⌘-option-escape and then press the return key twice. This may safely force-quit the game even if you can't see anything happen. In Panther, you can also try pressing ⌘-shift-option-escape. This force-quits the active application without asking for confirmation.

Replacing Smart Replace

Q **In the law office where I work, I use a set of 10,000 Word master documents, which is duplicated on each user's computer. I make changes to the master set of documents and then regularly update the other users' set of copies. Connectix's Copy Agent's Smart Replace feature allowed us to change only the documents that had been updated, but it doesn't run on OS X. Is there another tool that can do the same thing?**

Scott Darling

A I can recommend three – Jason Weber's $20 ExecutiveSync (**www.executivesync.com**), Econ Technologies' $20 ChronoSync (**www.econtechnologies.com**), and Qdea's $30 Synchronize X Plus (**www.qdea.com**). Although classified as synchronization utilities, they work well for backing up files, and because they're designed to synchronize folders and volumes, they replace only changed files.

You might prefer ChronoSync or Synchronize X Plus because they offer scheduling features. Put them to good use by placing the master folder of Word documents on the office's server, providing each user with a copy of one of these utilities, and configuring each user's utility to synchronize with that master folder as often as you deem necessary.

Path to happiness

TIP To add a quick stroke to a Photoshop path, simply select a brush and press Enter – presto, the path is stroked. **MW**

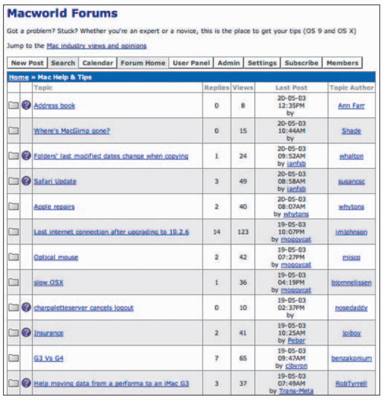
GET QUICK ANSWERS HERE

Macworld contributing editor Christopher Breen answers readers' questions and selects reader-submitted tips for this column.

Tips: Send your tips (include your address and phone number, and mark Q&A in the subject line of the email) to **qanda@macworld.co.uk**. We pay £25 for each tip published here. We regret that we cannot make personal replies.

Questions: If you have a question, the fastest way to an answer is via Macworld's forums: go to **www.macworld.co.uk/forums**. The Mac Help & Tips Forum should be your first port of call. You need to register to use the forums, but it's free.

The forums are where Macworld editors and a host of Mac know-it-alls make it our business to put your Mac back in the pink. Before you post your cry for help, search the forum for similar queries. It's likely that if you're having problems, then someone else has already encountered and maybe even solved them.



Macworld Forums

Got a problem? Stuck? Whether you're an expert or a novice, this is the place to get your tips (OS 9 and OS X)

Jump to the Mac industry views and opinions

Topic	Replies	Views	Last Post	Topic Author
Address book	0	8	20-05-03 12:35PM by	Ann Farr
Where's MacGimp gone?	0	15	20-05-03 10:44AM by	Shade
Folders' last modified dates change when copying	1	24	20-05-03 09:52AM by ianfsb	whalton
Safari Update	3	49	20-05-03 08:58AM by ianfsb	susancsc
Apple repairs	2	40	20-05-03 08:07AM by whytons	whytons
Lost internet connection after upgrading to 10.2.6	14	123	19-05-03 10:07PM by moggycat	imjohnson
Optical mouse	2	42	19-05-03 07:27PM by moggycat	misco
slow OSX	1	36	19-05-03 04:19PM by moggycat	bjornnelissen
charpaletteserver cancels logout	0	10	19-05-03 02:37PM by	nosedaddy
Insurance	2	41	19-05-03 10:25AM by Pebar	joiboy
G3 Vs G4	7	65	19-05-03 09:47AM by cjbyron	benzakonium
Help moving data from a performa to an iMac G3	3	37	19-05-03 07:49AM by Trans-Meta	RobTyrrell

Macworld Buyers' Guide

Apple divides its Macs into consumer and professional, and desktop and portable. But just because you fancy an iMac, don't rule out a portable – you might be surprised how much a PowerBook or iBook suits you. And some users may require a "pro" machine even if they class themselves as a "consumer". Decide what it is you want to do, and follow our advice here.

Desktop or portable

If you're often on the move, consider an iBook or PowerBook. You can easily hook each up to a larger monitor and separate mouse on a desk when you're back at base. They're easy to hide away, and with AirPort wireless networking, you can access the Internet up to 150-feet away from your telephone connection.

Apple's portables come loaded with every high-tech port needed, unlike most Windows laptops. The iBook is ultra-small, lightweight and, importantly for students, relatively impact-resistant – and even its 12-inch screen is still sizeable. The pro PowerBook G4 is super-thin and lightweight, and boasts screens from 12 to 17 inches. Its set of ports, including S-Video and Gigabit Ethernet, is impressive – as is its DVD-R SuperDrive.

Performance

Gauging speed by **processor** megahertz ratings is the easy – but incorrect – way to judge performance. You must take into account the amount of memory, the size and speed of the hard disk, graphics card and video memory, and size of cache.

The PowerPC G5 processor is a super-fast, next-generation 64-bit chip from IBM. If blistering performance at the bleeding edge is what you need, a Power Mac G5 is a must.

G4
WITH VELOCITY ENGINE

The PowerPC G4 processor from Motorola drives the Power Mac G4, PowerBook, iMac and eMac. It is specially optimized to speed-up selected programs via AltiVec technology.

Apple now uses two PowerPC processors: the **G4** and **G5**. Both include AltiVec technology that makes specially optimized software run even faster. The full potential of the G5 will be realized when software – and especially the operating system – is optimized for its 64-bit architecture. Currently, nearly all software runs at the G4's 32-bit level. That said, the G5 is still faster – but not enough to disregard the speedy G4, which has plenty of life left in it yet.

Word-processing, spreadsheets, email and Web browsing don't require the very fastest processors, but digital photography, video, and graphics do.

The more memory (**RAM**) you have on your Mac, the faster your applications will run, and you'll be able to keep more programs open at the same time. We recommend you upgrade the memory to *at least* 512MB of RAM.

Fitting extra RAM to a Mac is easy, but get your reseller to fit it if you're nervous. Depending on which model you buy, an extra 256MB can cost as little as £35 online (try **www.crucial.com/uk**), and adding 512MB more will set you back about £100. RAM for portables often costs more.

Cache is a memory subsystem that stores frequently used RAM data for even faster processing access. It's necessary because most computers suffer from performance bottlenecks that slow data down as it travels around the system. The Power Mac G5 features super-fast interconnects, and so requires less cache – the data speeds around fast enough without it.

Most consumers won't get near filling their **hard disk** with their AppleWorks files, digital snaps and Web downloads. Video-editors and iTunes users, however, will require a larger disk. Get as many gigabytes as possible. You can't upgrade the hard drives in the iBook, PowerBook, iMac or eMac, but you can add inexpensive external FireWire disks.

A **video card** connects a Mac to its display. Serious gamers and creative professionals should aim for one of the ATI Radeon or NVidia GeForce4 cards found in Power Macs, with 64MB of video RAM onboard. You can't later upgrade the video card in any of the other systems – but this shouldn't matter for many users.

Features

Apple differentiates its Mac models by type of optical drive: CD or DVD. All Macs come with at least a combination **DVD-ROM/CD-RW** drive that can read and writes CDs, and can play DVDs and DVD movies. The **DVD-R SuperDrive** does all that, and writes DVDs (DVD-R) of iMovies and digital snaps that play in domestic DVD players. The desktop Macs' SuperDrive writes to DVD at 4x-speed; the PowerBook's at 1x-speed.

All Macs come with top-of-the range connectivity features. Networking is at least 10/100BaseT **Ethernet**, with 1,000BaseT for Power Macs and the 15-inch and 17-inch PowerBooks.

All Macs offer at least two USB **ports** for peripherals, and at least one FireWire 400 (400Mbps) for digital video and peripherals. All now boast 480Mbps USB 2.0, except the eMac's older 12Mbps USB 1.1. USB 2.0 is compatible with USB 1.1 devices. The eMac's FireWire port makes the lack of USB 2.0 relatively meaningless. The 15-inch and 17-inch PowerBooks and Power Mac G5 include a FireWire 800 port (800Mbps).

All Macs ship with an internal 56Kbps modem. If you're frequently connected to the the Internet for long periods of time (especially in peak weekday times), you'll probably save call charges by upgrading to a faster **ADSL** broadband connection. You'll need to add an ADSL modem or router, and pay an ISP from around £23 a month for the faster access – but you pay no call charges no matter how long a Mac is connected, and you can use the phone at the same time. Unfortunately, not all areas are ADSL ready – check your phone number at: **www.bt.com/broadband**.

Apple's **AirPort** wireless-networking technology – based on either the IEEE 802.11b or 802.11g industry standards – lets you browse the Internet from anywhere in your home, up to 150 feet away from your phone line or Ethernet connection. AirPort uses radio waves, so it even works through walls. The latest Macs use **AirPort Extreme** (802.11g), boasting 54Mbps speeds, compared to the older AirPort's 11Mbps.

All Apple's new Macs come with the top-quality **iLife** suite of integrated digital-lifestyle software. **iMovie** is a simple but powerful digital-video editor that works with FireWire. **iTunes** is music 'jukebox' software that can manage MP3 and AAC files, and burn audio CDs. **iPhoto** is a superb program that helps import, edit, organize and share digital photos. DVD-R SuperDrive models come with **iDVD**, which makes creating DVDs a doddle. Some Macs also ship with **AppleWorks** – a suite of easy-to-use business programs. The consumer Macs also ship with reference CDs and games.

Apple charges £69 per year for its online-based iTools, now called **.Mac.** You get an email address, 100MB of free Web space, simple Web-site templates, backup and virus protection.

Apple and its partners have made great efforts to ensure that Macs are largely **compatible with Windows PCs**. USB and FireWire help on connectivity. Emulation programs such as Virtual PC can run Windows software straight from a Mac.

Key applications, such as Microsoft Office, Adobe Photoshop and Macromedia Dreamweaver are all fully compatible with their Windows counterparts. You can swap Word, Excel and PowerPoint documents between the platforms.

Education pricing

Apple offers special pricing for educational users. Institutions such as schools and colleges get the biggest discounts. Teachers and students get about a 9 per cent discount via the online Apple Store – click on Education. **MW**

continues page 216

UPDATED 22/10/03

The main selling points of the **iBook** are its compact, lightweight, impact-resistant case and low price. Its processor has recently been upgraded to a G4, which makes it a very capable OS X machine.

The 256MB RAM is fine for OS X and a couple of programs, but performance will be boosted greatly by adding as much as you can. Via the Apple Store, the maximum 640MB of RAM will cost £120; via an online reseller, as little as £90.

The iBook ships with iMovie, iTunes and iPhoto, as well as the World Book encyclopedia and a couple of games. Word-processing, database, spreadsheet, presentations and graphics tools are provided by AppleWorks.

S-Video and composite video output require a £15 Apple Video Adaptor. Video mirroring to a projector or monitor is via the Apple VGA Display Adaptor.

Pros: Small enough to slip into a backpack, tough enough for schoolkids, the iBook is a more than capable and affordable consumer portable.

Cons: Requires more RAM. Ask for a larger hard-drive in the 12.1-inch model if you're an iTunes or iMovie user. The 14.1-inch model has a larger viewing area, but no more pixels and is half a kilo heavier.

All iBooks:
Video card: 32MB ATI Mobility Radeon 9200. **Resolution:** 1,024-x-768 pixels
Memory: 256MB (Max: 640MB)
Cache: 256K L2
USB 2.0: 2 **FireWire 400:** 1
Ethernet: 10/100BaseT **AirPort:** 54Mbps

■ Entry-level 12.1-inch TFT:
Processor: 800MHz G4
Hard disk: 30GB
Optical: DVD-ROM/CD-RW
Weight: 2.2kg **Price:** £849
Star Rating: ★★★★/8.4

■ Entry-level 14.1-inch TFT:
Processor: 933MHz G4
Hard disk: 40GB
Optical: DVD-ROM/CD-RW
Weight: 2.2kg **Price:** £999
Star Rating: ★★★★/8.4

■ High-end 14.1-inch TFT:
Processor: 1GHz G4
Hard disk: 60GB
Optical: DVD-ROM/CD-RW
Weight: 2.7kg **Price:** £1,199
Star Rating: ★★★★/7.8

UPDATED 22/10/03

For the consumer/education market, the **eMac** offers a fast G4 processor, large CRT screen (with surprisingly small footprint), multiple optical-drive options, and superb pricing. It measures up well against the iMac. Its built-in 17-inch CRT display offers more screen-space at larger resolutions than the 15-inch LCD iMac. It costs a lot less than the top-end 17-inch iMac. Many will be swayed, however, by the iMac's LCD screen (think long and hard about screen size) and flexibility.

It's fast enough for consumer and educational tasks (Web, email, word-processing, accounts, digital photography, iTunes, etc), and capable of running even pro applications such as Adobe Photoshop.

Add more RAM; at least 512MB is recommended. Via the Apple Store, this will cost up to £120; online, it can be found for £60. A tilt-&-swivel stand for the eMac costs £49.

The eMac ships with the Apple programs (iMovie, iTunes, iPhoto; and iDVD on the SuperDrive model), as well as the World Book encyclopedia, and Deimos Rising game. Word-processing, spreadsheet, database, presentations and graphics tools are provided by AppleWorks.

Pros: Top features at attractive prices. Impressive screen resolution.

Cons: Requires more RAM. USB 1.1 rather than much faster USB 2.0, but FireWire makes up for this. Not as flexible as iMac. Limited internal expandability (extra RAM and AirPort Card only), although external alternatives are plentiful.

All eMacs:
Processor: 1GHz G4
Screen: 17-inch CRT (1,280-x-960 pixels)
Video card: 32MB ATI Radeon 7500
Cache: 256K L2
USB 1.1: 3 **FireWire 400:** 2 **PCI:** 0
Ethernet: 10/100BaseT **AirPort:** 54Mbps

■ Entry-level:
Memory: 128MB (Max: 1GB)
Hard disk: 40GB
Optical: DVD-ROM/CD-RW
Price: £649
Star Rating: ★★★★/8.8

■ High-end:
Memory: 256MB (Max: 1GB)
Hard disk: 80GB
Optical: DVD-R SuperDrive (4x)
Price: £849
Star Rating: ★★★★★/9.2

UPDATED 08/09/03

The **iMac** boasts a "floating" flat-panel LCD screen that is held by a flexible chrome-pipe neck, allowing you to move it up and down and from side to side to gain a more comfortable viewing experience. LCD screens aren't just kinder to the neck, they're also easier on the eye than CRTs.

While the 15-inch LCD doesn't offer as large a viewing area as the eMac's, the widescreen 17- and 20-inch LCDs are particularly handy for multi-paletted pro applications. Inevitably, the LCD screens make the iMac more expensive than the CRT-based eMac – but offer compelling reasons for the extra outlay. The dome-like base also saves valuable desk space.

The iMacs ship with the great Apple programs (iMovie, iTunes, iPhoto; and iDVD on the SuperDrive model), encyclopedia, games, and AppleWorks.

Pros: Nothing beats the iMac on looks, and the adjustable LCD screen is a real improvement on the static CRT – although the eMac's maximum resolution is greater than the 15-inch G4 iMac's.

Cons: Like the eMac, the G4 iMac has limited internal expandability (extra RAM and AirPort Card only), although inexpensive external alternatives are plentiful.

All G4 iMacs: **Ethernet:** 10/100BaseT
USB 2.0: 3 **FireWire 400:** 2 **PCI:** 0
Hard disk: 80GB **AirPort:** 54Mbps
RAM: 256MB (Max: 1GB) **Cache:** 256K L2
Apple Pro Speakers: Included.

■ 15-inch:
Processor: 1GHz G4
Optical: DVD-ROM/CD-RW
Screen: 15-inch LCD (1,024-x-768 pixels)
Video card: 32MB NVidia GeForce4 MX
Price: £999
Star Rating: ★★★★/8.4

■ Widescreen 17-inch:
Processor: 1.25GHz G4
Optical: DVD-R SuperDrive (4x)
Screen: 17-inch LCD (1,440-x-900 pixels)
Video card: 64MB GeForce FX 5200 Ultra
Price: £1,449
Star Rating: ★★★★/8.6

■ Widescreen 20-inch:
Processor: 1.25GHz G4
Optical: DVD-R SuperDrive (4x)
Screen: 20-inch LCD (1,680-x-1,050 pixels)
Video card: 64MB GeForce FX 5200 Ultra
Price: £1,749
Star Rating: ★★★★/8.7

UPDATED 08/10/03

Despite the arrival of the Power Mac G5, Apple is still selling the minitower **Power Mac G4**. Prices are reasonable, but you don't get the ultimate in performance.

Power users should seriously consider saving for the Power Mac G5, which is far more advanced and potentially a lot more powerful.

The stop-gap Power Mac G4 range offers older specs than those available previously. There's no FireWire 800, USB 2.0, or AirPort Extreme/Bluetooth built in.

But it does offer something that the G5 doesn't: the ability to boot in Mac OS 9. This may interest musicians and designers who are still waiting for OS X-compatible plug-ins. This is the only reason to consider the Power Mac G4 these days.

Pros: The entry-level model is an inexpensive pro-tower that offers OS 9 bootability – still important to some users. The dual-processor machines are well-priced for OS X-fearing power users.

Cons: Uses older specifications than previous G4s; superseded by G5.

All G4 Power Macs:
USB 1.1: 2 **PCI:** 4
FireWire 400: 2
System Bus: 167MHz
Ethernet: 10/100/1000BaseT
AirPort: 11Mbps

■ Entry-level:
Processors: 1 x 1.25GHz G4
Memory: 256MB DDR (Max: 2GB)
Disk: 80GB **Cache:** 1MB L3
Optical: DVD-ROM/CD-RW
Video card: 64MB ATI Radeon 9000 Pro
Price: £999
Star Rating: ★★★★/7.4

■ Mid-range:
Processors: 2 x 1.25GHz G4
Memory: 256MB DDR (Max: 2GB)
Disk: 80GB **Cache:** 2MB L3 per chip
Optical: DVD-ROM/CD-RW
Video card: 64MB ATI Radeon 9000 Pro
Price: £1,239
Star Rating: ★★★★/7.5

■ High-end:
Processors: 2 x 1.25GHz G4
Memory: 512MB DDR (Max: 2GB)
Disk: 80GB **Cache:** 2MB L3 per chip
Optical: DVD-R SuperDrive (4x)
Video card: 64MB ATI Radeon 9000 Pro
Price: £1,489
Star Rating: ★★★★/7.5

POWERBOOKS UPDATED 16/09/03

Its lightweight case and speedy processor make the **PowerBook G4** a genuine alternative to the desktop Power Mac. There are two compact 12.1-inch screen models, two 15.2-inch widescreen, and one large 17-inch widescreen. All now feature the lightweight anodized-aluminium case.

G4 processor speeds start at 1GHz – easily fast enough for pro applications, and the video cards boast up to 64MB of video RAM. Each size has a slot-loading DVD-R SuperDrive model – although this runs slower than that in desktop models.

If you fancy the iBook for its compact size and light weight, but demand more power, the **12-inch** PowerBook is a great choice if you're frequently on the move. Digital video-out is via a mini-DVI port. Connect to an external Apple LCD display with a £75 DVI-to-ADC adaptor. It lacks fastest Gigabit Ethernet – although this won't bother many.

Mobile computers are all about compromise (size against performance and features), and the middle model will appeal to those who can take a little extra weight for the extra screen space. Now that the **15-inch** model is in the aluminium case, with AirPort Extreme and FireWire 800, it is the pick of the range.

The **17-inch** PowerBook boasts the largest laptop screen on earth, and will appeal to video or music pros, who regularly need to take their computers on the road. Size isn't really an issue when travelling, but frequent laptop luggers will be put off by its weight – although it's reasonable for such a large-screen laptop.

All models support dual-screen display using external monitors.

Pros: Lightweight, slim and stylish, there's a PowerBook G4 model for everyone: from compact to giant; USB 2.0 on all models; 1.25GHz 15-inch and 17-inch include backlit keyboard.

Cons: 12-inch has no FireWire 800; 17-inch shows its size by weight.

Both 12.1-inch PowerBooks:
Processor: 1GHz G4 **AirPort:** 54Mbps
Memory: 256MB (Max: 1.25GB)
Cache: 512K L2 **Hard disk:** 40GB
Video card: 32MB NVidia GeForceFX 5200
Resolution: 1,024-x-768 pixels
USB 2: 2 **FireWire 400:** 1 **Weight:** 2.1kg
Ethernet: 10/100BaseT **S-Video:** 1
■ DVD-ROM/CD-RW **Price:** £1,299
Star Rating: ★★★★/8.4
■ DVD-R SuperDrive (1x) **Price:** £1,449
Star Rating: ★★★★/8.6

Both 15.2-inch PowerBooks:
Cache: 512K L2 **Weight:** 2.49kg
Resolution: 1,280-x-854 **AirPort:** 54Mbps
USB 2.0: 2 **FireWire 400:** 1
PC Card: 1 **FireWire 800:** 1
Ethernet: 10/100/1000BaseT **S-Video:** 1
Video card: 64MB ATI Radeon 9600
■ DVD-ROM/CD-RW 15.2-inch:
Processor: 1GHz G4 **Hard disk:** 60GB
Memory: 256MB (Max: 2GB)
Price: £1,599 **Star Rating:** ★★★★★/9.0
■ DVD-R SuperDrive (1x) 15.2-inch:
Processor: 1.25GHz G4 **Hard disk:** 80GB
Memory: 512GB (Max: 2GB)
Price: £1,999
Star Rating: ★★★★★/9.0

■ DVD-R SuperDrive 17-inch:
Processor: 1.33GHz G4
AirPort: 54Mbps
Memory: 512MB (Max: 1GB) **PC Card:** 1
Cache: 512K L2 **Hard disk:** 80GB
USB 2: 2 **FireWire 400:** 1 **FireWire 800:** 1
Ethernet: 10/100/1000BaseT **S-Video:** 1
Video card: 64MB ATI Radeon 9600
Resolution: 1,440-x-900 pixels
Optical: DVD-R SuperDrive (1x)
Weight: 3.08kg
Price: £2,399
Star Rating: ★★★★★/9.0

UPDATED 18/11/03

The **Power Mac G5** is the spearhead of Apple's attack on the PC workstation market – packed with next-generation technologies, and running IBM's extremely powerful 64-bit G5 processor.

Its phenomenal power isn't just down to the processor. Performance bottlenecks are eliminated by an industry-best frontside bus running at up to 1GHz, and HyperTransport interconnects.

Hard drives are Serial ATA, supporting 1.5Gbps throughput per channel.

All this speed generates a lot of heat, and Apple has created a smart cooling system with up to nine fans and four thermal zones. As fans can slow down depending on the operation in progress, sound levels are reduced, making the Power Mac G5 much quieter than the G4. The addition of USB 2.0 ports means that the Power Mac G5 can support many peripherals previously pegged back at slower USB 1.1 speeds.

The top Power Macs feature two G5 chips – making it the perfect machine for multiprocessor-optimized applications such as Adobe Photoshop and Final Cut.

The ability to add up to 8GB of super-fast DDR RAM is another plus for OS X users – particularly for creative professionals.

As a pro system, it ships with Gigabit Ethernet for faster networking – although you'll have to upgrade your LAN's switches to get all the benefits.

The case is well designed for easy access and quick upgradability. It's even easier to fit RAM and drives than in the Power Mac G4 – you don't need any tools; everything slides and clicks into place with ease.

The Power Mac ships with the Apple iLife programs (iMovie, iTunes, iPhoto; and iDVD).

Pros: Super-fast; next-generation technologies; up to 8GB RAM; DVD-R SuperDrive; digital audio; quiet.

Cons: No good if you want to boot in Mac OS 9, but Classic works fine.

All G5 Power Macs: **USB 2.0:** 2 **FireWire 400:** 2 **FireWire 800:** 1 **AGP 8X Pro:** 1
Ethernet: 10/100/1000BaseT **AirPort:** 54Mbps

■ Entry-level:
Processors: 1 x 1.6GHz G5
Frontside Bus: 800MHz
Memory: 256MB DDR (Max: 4GB)
Hard disk: 80GB Serial ATA
Optical: DVD-R SuperDrive (4x)
PCI: 3 x 33MHz
Video card: 64MB GeForce FX 5200 Ultra
Price: £1,399
Star Rating: ★★★★/8.5

■ Mid-range:
Processors: 2 x 1.8GHz G5
Frontside Bus: 900MHz
Memory: 512MB DDR (Max: 8GB)
Hard disk: 160GB Serial ATA
Optical: DVD-R SuperDrive (4x)
PCI-X: 1 x 133MHz; 2 x 100MHz
Video card: 64MB GeForce FX 5200 Ultra
Price: £1,899
Star Rating: ★★★★★/9.0

■ High-end:
Processors: 2 x 2GHz G5
Frontside Bus: 1GHz
Memory: 512MB DDR (Max: 8GB)
Hard disk: 160GB Serial ATA
Optical: DVD-R SuperDrive (4x)
PCI-X: 1 x 133MHz; 2 x 100MHz
Video card: 64MB ATI Radeon 9600 Pro
Price: £2,299
Star Rating: ★★★★★/9.0

Macworld Star Ratings

Recommendations you can trust

Macworld's Star Ratings section lets you compare Macintosh products by providing summaries of Macworld's authoritative hardware product reviews from the past year. It includes detailed buying advice for each product category and a fuller description of our Editors' Choice winners. Alongside the list of Macworld Star Ratings are handy tips and further product buying advice. Star Ratings for Mac systems are published in the Mac Systems Guide – see earlier. Subscribers can go to **www.macworld.co.uk** to explore our comparative feature round-ups and reviews for both software and hardware. Listings tell you which back-issue, or online archive, to search.

What the scores mean The number of stars indicates the product's level of quality; each product also gets a numeric score that provides a more exact assessment of the product's quality within that level. We evaluate seven factors to derive the star rating: feature set; design implementation; performance; reliability; ease of use; innovation; and value. We take these evaluations, weight their importance for each product class, and calculate the final score.

REAL PRODUCTS REAL RATINGS

★★★★★	9.0 to 10.0	Outstanding
★★★★	7.0 to 8.9	Very good
★★★	5.0 to 6.9	Good
★★	3.0 to 4.9	Flawed
★	0.0 to 2.9	Unacceptable

Macs are used in most recording studios because a Mac's PowerPC processor is more efficient than Intel chips running at the same speed, so it can handle extra channels and signal processing, or both simultaneously. Apple's **GarageBand** (part of the £39 **iLife** suite) is a great place to start for budding digital musicians.
See Macworld July 2003 for professional solutions.

If you're still linking Macs with 10BaseT **Ethernet**, move to the faster 100BaseT, available on all current Macs. The latest Power Macs and PowerBooks come with 1000BaseT (Gigabit) Ethernet, which is even faster than 100BaseT.

Apple's **AirPort Extreme** is a fast wireless-networking technology. Add a £59 (2.0) or £79 (Extreme) card, and you can network and browse the Web cablelessly up to 150ft away from your £149 or £189 Base Station. AirPort works with all current Macs, and is now a viable alternative to wire-based networking. If you can, upgrade your Internet connection to **broadband**, via ADSL, cable or satellite. You'll need either an ADSL router (recommended) or a special modem. Add extra peripherals Macs with a **USB** or **FireWire hub**.

It's a snap to load digital photos into a Mac. With **iPhoto**, digital photography moves to an even higher level. **Resolution** of digital cameras is measured in horizontal and vertical pixels: 1,024-x-768, etc. High-resolution images show a greater level of detail – and can be more readily enlarged – than images with fewer pixels. Manufacturers also list resolution in terms of the total number of pixels. For example, 1,280 horizontal by 960 vertical pixels create a total of 1.2 million pixels (1,280-x-960 = 1.2 megapixels.

Any camera with an aggregate resolution of over 1 million pixels is referred to as a **megapixel** camera. If you plan to use images on the Web, you can get by

AUDIO / MUSIC

★★★★/7.0	**AV320**, Archos, *01264 366 022*, £560 (inc. VAT). Audio and video in your hand. Outputs to TV, but not too easy to use.	*Nov 2003*
★★★★★/9.0	**iPod 20GB,** Apple, £299 (inc. VAT). Super-slim player holds 5,000 tunes, has solid-state controls, and dock.	*Nov 2003*
★★★★★/9.2	**iPod 40GB,** Apple, £399 (inc. VAT). Super-slim player holds 10,000 tunes, has solid-state controls, and dock.	*Nov 2003*
PREVIEW	**iPod mini,** Apple, expected to be £199. The brand-new 4GB MP3 player – complete with new case design.	*March 2004*
★★★★/8.8	**JBL Creature,** Harman @ Computers Unlimited, *020 8200 8282,* £99. Speakers look great, but the sound quality could be better.	*March 2003*
★★★★★/9.2	**Mbox for OS X,** Digidesign, *01753 653 322*, £379. Records, edits and mixes multiple tracks, but needs free USB port on Mac.	*March 2003*
★★★★/7.7	**Podio Pro,** MacAlly, *01392 426 473,* £58.69 (inc. VAT). White iPod headphones with noise-cancelling feature, and flight adaptor.	*Oct 2003*
★★★★★/9.0	**PowerWave,** Griffin @ AM Micro, *01392 426 473,* £99 (inc. VAT). Excellent-quality audio and includes software.	*March 2003*
★★★★/8.7	**SliMP3,** Slim Devices @ Multitask Computing, *01322 380 023,* £209 (inc VAT). Stylish wireless functionality, MP3 streamer.	*March 2003*
★★★/6.6	**Voice Recorder,** Belkin, *00800 2235 5460,* £39 (inc. VAT). Nifty microphone for dock-enabled iPods.	*Expo 2003*

CONNECTIVITY / NETWORKING

Servers, routers, software, remote access, SCSI cards, emulators, hubs, adaptors…

★★★★/8.8	**AMX-64**, ADSL Nation, *01865 761 114,* £99 (inc VAT). Affordable 4-port ADSL router that's easy to set-up.	*Expo 2002*
★★★★/8.5	**Cayman 3341**, Netopia, *020 8358 5858,* £99 (inc VAT). Affordable 2-port ADSL router that's easy to set-up.	*Sept 2003*
★★★★/8.8	**DG814**, Netgear, *020 7216 0014,* £95 (inc VAT). 4-port ADSL router that's easy to set-up.	*Expo 2002*
★★★★/7.6	**extendAIR Direct**, Dr Bott; Channel Dynamics, *0870 607 0540,* £139 (inc VAT). Antenna to extend AirPort's range.	*Jan 2004*
★★★★/8.5	**GSW-8**, Corega, *08705 168 626,* £115 (inc VAT). 8-port Gigabit Ethernet switch.	*Sept 2003*
★★★★/7.5	**SpeedTouch 510**, *01295 222 170,* £163 (inc VAT). Stylish and secure ADSL router, let down by hard-to-follow set up.	*Expo 2002*
★★★★/8.8	**SpeedTouch 330**, Alcatel, *01295 222 170,* £79 (inc VAT). Stylish, compact ADSL modem that's Mac OS X-friendly.	*Expo 2002*
★★★★/8.7	**StingRay**, Hermstedt, *020 8200 8282,* from £2,895 (ex VAT). Cheap to run, secure and easy-to-use file-transfer solution.	*Feb 2003*

DIGITAL CAMERAS / CAMCORDERS / VIDEO-CON

Consumer and professional; still and video; Apple's iPhoto. All prices include VAT.

Digital-still cameras

★★★★/8.1	**007 JB1**, Digital Dream, *01304 248 200*, £69. Zippo-sized 0.3-megapixel gadget-camera – basic quality, but tons of fun.	*Expo 2003*
★★★/6.7	**Camedia C-350**, Olympus, *0800 072 0070*, £249. Easy to use and traditionally styled 3.2-megapixel model.	*Aug 2003*
★★★/6.9	**C-740 Ultra Zoom**, Olympus, *020 7253 2772*, £299. 3.2-megapixel unit offering excellent images, but poor documentation.	*Dec 2003*
★★★★/7.0	**Caplio G4/Wide**, Ricoh, *01782 753 300,* £199. A 3.2-megapixel model offering fast shutter response and a great lens.	*Jan 2004*
★★★/6.8	**Cyber-shot DSC-P8**, Sony, *08705 111 999*, £350. Compact 3.2-megapixel camera with movie mode but no manual controls.	*Aug 2003*
★★★/6.8	**Cyber-shot DSC-P72**, Sony, *08705 111 999*, £300. Same as DSC-P8 but lacking controls over sharpness and saturation.	*Aug 2003*
★★★/6.7	**Cyber-shot DSC-V1**, Sony, *08705 111 999*, £546. Well-designed 5-megapixel model; delivers noisy shots, though.	*Dec 2003*
★★★/6.5	**Dimage Xt**, Minolta, *01908 200 400,* £249. Slimline 3.2-megapixel unit with easy-to-use movie mode.	*Dec 2003*
★★★★/8.7	**EOS 10D**, Canon, *08705 143 723,* Body-only, £1,499. Great digital SLR with well-balanced mix of features, comfort and quality.	*Oct 2003*
★★★★/8.6	**EOS 300D**, Canon, *08705 143 723,* £999. True SLR with removable lenses and low price, but no rear-mounted control-wheel.	*Expo 2003*
★★★★/8.6	**FinePix A303** Fujifilm, *020 7586 1477,* £449. SuperCCD offers an effective resolution of six megapixels.	*Sept 2003*
★★★★/7.8	**FinePix F410 Zoom** Fujifilm, *020 7586 1477,* £299. Decent 3-megapixel entry-level with 3x zoom.	*Sept 2003*
★★★★/8.5	**FinePix F601 Zoom** Fujifilm, *020 7586 1477,* £499. SuperCCD offers an effective resolution of six megapixels; funky look.	*Sept 2003*
★★★★/7.7	**IXUS II**, Canon, *08705 143 723,* £369. Nicely designed 3.2-megapixel model with movie mode but no red-eye.	*Aug 2003*
★★★/6.6	**Lumix DMC-FZ1**, Panasonic, *08705 357 357,* £329. Stunningly fast 2-megapixel unit that unfortunately lacks full manual controls.	*Dec 2003*
★★★★/7.5	**Mju 300**, Olympus, *020 7253 2772,* £299. Responsive 3.2mp model with reliable picure quality, but a lack of manual controls.	*Jan 2004*
★★★★/8.5	**PowerShot A80**, Canon, *08705 143 723,* £349. Responsive 4-megapixel camera that boasts spanking image-quality.	*Expo 2003*
★★★★/8.0	**PowerShot G5**, Canon, *08705 143 723,* £628. An excellent 5-megapixel camera with add-on lens and flash support.	*Dec 2003*
★★★★/8.0	**PowerShot S50**, Canon, *08705 143 723,* £549. A 5-megapixel model with full manual controls and a movie mode.	*Aug 2003*
★★★★/8.6	**Photosmart 735**, HP, *08705 47 47 47,* £199. A cheap-as-chips, no-nonsense 3.2-megapixel camera with 3x optical zoom.	*Nov 2003*
★★★★/8.2	**Revio KD-420Z**, Konica Minolta, *020 8751 6121,* £249. Blindingly fast and rugged 4-megapixel model with great image quality.	*Jan 2004*

Consumer digital camcorders

★★★★/8.0	**DM-MV5i,** Canon, *0800 616 8883*, £850. This camcorder has good specs, but is £50-£100 more than equally specced models.	*March 2003*
★★★★/8.5	**DM-MX2i,** Canon, *0800 616 8883*, £1,149. With optical stabilization, this camcorder delivers crisp pictures – at a price.	*March 2003*
★★★★/7.5	**DS60 DV Camcorder**, Panasonic, *08705 357 357,* £449. Budget model offering decent quality for the price.	*Aug 2003*
★★★★★/9.0	**DVX100**, Panasonic Broadcast, *08700 100 464,* £3,195. Film-style aesthetics without the Hollywood budget.	*Nov 2003*
★★★★/8.0	**GR-D70**, JVC, *0870 300 5000,* £600. Low-price palmcorder that offers DV-in and -out, and excellent image-quality.	*Aug 2003*
★★★★/8.5	**GR-DV700**, JVC, *0870 300 5000,* £750. Midrange, easy-to-use 1.33-megapixel camcorder. Excellent for the price.	*Aug 2003*
★★★/6.5	**GR-PD1**, JVC, *0870 330 5000*, £2,500. High Definition camcorder with 16:9 mode and MPEG-2 recording. Little Mac support.	*Expo 2003*
★★★★/8.6	**iSight**, Apple, £119. Idiot-proof, portable webcam that ties in well with iChat AV.	*Sept 2003*
★★★★/8.7	**MVX150i,** Canon, *08705 143 723*, £899. This camcorder offers great image quality, 16x zoom and impressive features.	*Sept 2003*
★★★★/8.3	**NV-GS5**, Panasonic, *0870 357 357,* £850. With a decent resolution and variable-speed zoom, the GS5 only lacks a stills mode.	*March 2003*
★★★★/8.6	**NV-GX7**, Panasonic, *0870 357 357,* £750. Excellent image quality, a stills mode and night shooting.	*March 2003*
★★★★/8.7	**DCR-PC8**, Sony, *020 7365 2947*, £549. Great little camcorder that's a joy to use; requires FireWire cable.	*Sept 2003*
★★★★/8.3	**VP-D130**, Samsung, *0800 521 652,* £700. This cheap camcorder is for those who want to keep it simple.	*March 2003*

FireWire webcams

★★★★/7.7	**Fire-i,** Unibrain; Channel Dynamics, *0870 607 0540*, £92. Great in low light, compact, but mediocre quality on colours and pictres.	*Jan 2004*
★★★★/7.7	**iBot Standard,** Orange Micro; Channel Dynamics, *0870 607 0540*, £88. Great picture quality, but bulky and poor software.	*Jan 2004*
★★★★/8.6	**iSight,** Apple, £119. Excellent picture quality; built-in mic; great design, but poor in low-light conditions. No additional software.	*Jan 2004*
★★★★/8.3	**Pyro 1394 WebCam,** ADS; Datavision UK, *01525 406 886*, £89. Great picture quality and software, but a little bulky.	*Jan 2004*

DISPLAY

Monitors, projectors and video cards.

17-inch flat-panel LCD displays

★★★★/8.8	**17-inch Studio Display**. Apple, *0800 039 1010*, £549 (inc VAT). Apple's 1,280-x-1,024-pixel screen is big as well as beautiful.	*July 2002*
★★★★/7.7	**C783,** Microtek, *01372 844 880*, £553. Good-value if-dull flat-panel offering built-in speakers.	*July 2002*
★★★★★/8.8	**Gallery 1740,** Formac, *020 8533 4040*, from £528 (inc VAT). Great-looking 17.4-inch 1,280-x-1,024-pixel ADC monitor.	*July 2002*
★★★★/7.7	**SyncMaster 171S**, Samsung, *0800 521 652*, £489. Compact, lightweight LCD screen that's nicely styled.	*July 2002*

18-inch flat-panel LCD displays

★★★★/7.7	**FlexScan L685-EX,** Eizo, *01483 719 500*, £1,089. Compact 18.1-inch 1,280-x-1,024-pixel LCD monitor.	*July 2002*
★★★★/8.6	**MultiSync LCD 1880SX,** NEC, *0801 201 160*, £959. Compact, attractive 18.1-inch 1,280-x-1,024-pixel LCD monitor.	*July 2002*
★★★★/8.6	**photon18blue**, LaCie, *020 7872 8000*, £899. 18-inch 1,280-x-1,024-pixel LCD screen boasting great image quality.	*July 2002*

19-22-inch flat-panel LCD displays

★★★★★/9.2	**Cinema Display HD**, Apple, *0800 039 1010*, £1,699 (inc VAT). **Editors' Choice: High-end flat-panel displays** Excellent high-definition 1,920-x-1,200-pixel screen that's suitable for use with high-end digital-video editing.	*March 2003*
★★★★★/9.0	**Cinema Display**, Apple, *0800 039 1010*, £1,009 (inc VAT). Apple's 20-inch screen has a 1,680-x-1,050 wide-screen resolution.	*March 2003*
★★★★/8.5	**FlexScan L767,** Eizo, *01483 719 500*, £734. Affordable 19-inch LCD that comes with a digital interface.	*June 2003*
★★★★/8.3	**FlexScan L985-EX,** Eizo, *01483 719 500*, £1,561. Monster 21-3-inch LCD that's pricey, but is of undeniable quality.	*June 2003*
★★★★/8.5	**MultiSync LCD1920NX,** NEC, *0801 201 160*, £750. A good-value 19-inch LCD that offers a digital interface.	*June 2003*
★★★★/8.3	**MultiSync LCD2080UX,** NEC, *0801 201 160*, £1,048. 20.1-inch LCD that's well-priced, and includes an auto-adjust feature.	*June 2003*
★★★★/8.7	**P922E,** CTX, *01923 810 800*, £545 (inc. VAT). Inexpensive 19-inch LCD with USB 2.0 hub.	*Oct 2003*
★★★★/8.6	**Photon20Vision**, LaCie, *020 7872 8000*, £1,404. Quality 20.1-inch flat panel with calibration option, desk clamp and hood.	*June 2003*
★★★★/8.7	**S962A LCD Monitor,** CTX, *01923 810 800*, £492 (inc VAT). Affordable 19-inch flat-panel display.	*Jan 2004*

21-inch+ CRT displays

★★★★★/9.0	**Diamond Pro 2070SB,** Mitsubishi, *020 7202 6300*, £499. **Editors' Choice: 21-inch+ CRT displays** This monitor offers top features at a great price. It can display at 2,048-x-1,536-pixels at 85Hz.	*Jan 2003*
★★★★/8.7	**electron22blue III**, LaCie, *020 7872 8000*, £699. Aperture-grille offering great image quality, but the competition is catching up.	*Jan 2003*
★★★★/7.0	**FlexScan T966,** Eizo, *01483 719 500*, £659. 21-inch aperture-grille at a reasonable price.	*Jan 2003*
★★★★/8.3	**Multiscan E520,** Sony, *08705 111 999*, £769. This is a high-quality monitor, but you pay extra for the Sony brandname.	*Jan 2003*
★★★★/7.0	**Reference Calibrator V,** Barco@Typemaker, *0221 604 1234*, £3,250. Pricey, but colour-accurate display is losing edge on rivals.	*Jan 2003*
★★★★/8.3	**SM1200NF**, Samsung, *0800 521 652*, £489. The screen looks dated, but it's feature rich with a decent resolution..	*Jan 2003*
★★★★/7.7	**VisionMaster Pro 513,** Iiyama, *01438 745 482*, £369. A great choice if you want cheap and cheerful.	*Jan 2003*

Projectors

★★★★/7.6	**LiteShow**, InFocus, *0800 028 6470*, £349. AirPort connection to the LP120 projector.	*Dec 2003*
★★★★★/9.1	**LP120**, InFocus, *0800 028 6470*, £1,999. Tiny, fully featured 1,100 ANSI lumen projector – the best there is.	*Dec 2003*

Display/TV hardware

★★★★/8.5	**Alchemy TV**, Miglia @ AM Micro, *01392 426 473*. TV tuner that can transfer VHS tapes to a Mac.	*Jan 2004*
★★★★/8.0	**CinemaLift**, LCDArms, *www.lcdarms.com*, £175. Well-designed flexible arm for raising a Cinema Display up to eye level.	*Jan 2004*
★★★★/8.2	**Eye TV**, El Gato @ CU, *020 8358 5858*. Easy-to-set-up method of watching television on your Mac.	*May 2003*

INPUT

Mice, trackballs, digital tablets… All prices include VAT.

★★★★/8.7	**Desktop Navigator**, Logitech, *01753 870 900*, £79. Affordable, attractive wireless keyboard.	*June 2003*
★★★★/8.2	**Graphire3 Studio XL**, Wacom, *Computers Unlimited, 020 8358 5858*, £179. A5 tablet with stylus and scroll-wheel mouse.	*Dec 2003*
★★★★/7.3	**Wireless Keyboard**, Apple, *0800 039 1010*, £59. Bluetooth keyboard complete with 128-bit encryption.	*Dec 2003*
★★★★/8.8	**Wireless Intellimouse Explorer 2.0**, Microsoft, *0870 207 7377*, £55. Five-button, side-scrolling optical mouse.	*Jan 2004*

with a low-res camera. If you want to use the images in print at anything greater than postage-stamp size, at least a two-megapixel camera is a must. Look for optical resolution; ignore interpolated resolution.

Select a camera that offers the option of switching between high-res/fewer shots and lower-res/many shots. SmartMedia **storage** cards are cheaper but flimsier, and offer less storage than CompactFlash cards. Sony cameras use MemorySticks. Other formats include SecureDigital, Multimedia, and the tiny XD Picture card. Digital cameras tend to be **battery** hogs, so rechargeable batteries are a must. NiCad batteries are cheaper than NiMH batteries, but the latter last longer between charges.

Those who don't own a **digital-video camcorder** are missing out on one of the best reasons to own a Mac. All of Apple's Mac models, even the least-expensive iMac, have built-in FireWire ports and iMovie software, making the creation of professional-looking videos for business, home, and school projects very easy.

Most camcorders use MiniDV tapes, tiny cassettes that store 60 minutes of high-quality digital video in standard-play mode or 90 minutes in long-play mode. Sony's MicroMV digital-video format is not yet supported. Once you record video, you can upload it to a Mac via a **FireWire** cable and edit it using either Apple's **iMovie** or a higher-end program such as Apple's **Final Cut Pro/Express**. Add effects with **Adobe After Effects**.

The DV format – used by DV, MiniDV, and Digital 8 cassettes – stores video at more than twice the resolution of standard VHS or 8mm tapes, and it stores 25 per cent more information than S-VHS or Hi8 tapes. Colour fidelity and noise immunity are also markedly better on DV tapes than on analogue tapes, resulting in breathtaking video quality. And because the recorded video is digital, you can upload it to your Mac or copy it to another DV tape without any loss of quality.

Aim for a FireWire digital camcorder with both **DV-In** and **-Out**, as this means you can transfer your edited movie from your Mac back to MiniDV tape.

The first decision you'll need to make is whether to get a flat-panel display, based on liquid crystal display (**LCD**) technology, or a cathode-ray tube (**CRT**) monitor.

CRTs are cheaper and offer higher colour vibrancy and accuracy than LCDs. If low price is your biggest requirement, or if you're looking for a display for publishing or design work, go with a CRT.

An LCD display's advantage is unparalleled sharpness and ultra-thin profile. If space considerations, or a cutting-edge look, top your list of concerns, and you can afford it, today's flat-panel displays are worth a serious look. With a flicker-free screen and tiny footprint, an LCD is easy on the eyes in more than one sense.

Today's monitors offer one or more of the following connections: VGA, DVI, or ADC. A screen hooked-up to a digital DVI or ADC connector offers sharper, clearer images than those connected via an analogue VGA connector. Analogue LCDs can display "noise", a by-product of converting the video signal from digital to analogue and then back again. The ADC (Apple Display Connector) port combines a DVI signal with power and USB. The single cable leaves your desk relatively clutter free, but ADC is available only on cards shipping in Power Mac G4s and Cubes released after August 2000.

Except for the Apple displays, most monitors can plug directly into an analogue VGA connector, making them compatible with current and older desktops and laptops. Some models offer both analogue and digital inputs. These are the most compatible, as they can plug

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into DVI or standard VGA connectors and, with a third-party adaptor, into ADC ports. The Apple displays require the ADC port available on only recent G4 and G5 desktops.

When comparing the image size of displays, be sure to check the **viewable image size**, not the claimed size of the CRT or flat-panel. The **resolution** of a monitor is expressed in horizontal and vertical pixel dimensions, and range from 640-x-480 pixels to 1,600-x-1,200 pixels and beyond. The higher the resolution, the more you will be able to see on-screen. The more inches, the larger the pixels.

A CRT's **dot pitch** measures how close adjacent phosphor dots (or stripes on aperture-grille CRTs) are to each other. In general, the smaller the dot pitch, the sharper (and more expensive) the display will be.

On CRT monitors, a low **refresh rate** – how many times your Mac sends a fresh copy of the screen image to your display – implies flicker, a major cause of eyestrain. The higher the refresh rate, the better. LCDs don't suffer from flicker at all.

High-end monitors may also come with **calibration** software and devices for ensuring accurate colour for publishing and design applications.

Input devices come in many shapes and sizes. Go for an **optical mouse**, which are less prone to wear-&-tear than the old-style mice. Apple's mouse is good, but lacks extra buttons and a scroll wheel – fantastic for zipping through documents and Web pages.

Graphics tablets are now very advanced and often come with pressure-sensitive pens, which enable more control when using natural-media graphics software like Painter. The harder you press, the thicker the line. They take some getting used to, but many artists swear by them – not at their mice!

The range of printers available is huge: fast network printers, for business, to slower-but-cheap colour printers for home.

Decide what you need from your printer, look at your budget and, most importantly, look at the **output** of the printer. The only way to avoid disappointment is to have a dealer print out a page in front of you. Remember that the test prints shown in shops are often done on expensive glossy paper.

Speed is also an issue. At home, waiting 15 minutes for a colour page to print may be acceptable. In the office, however, time is money – meaning that faster printers are needed.

Home/small office use: A4 Inkjets are the cheapest printers to buy, and can output near-photographic quality prints – great with digital cameras. If you mainly run-out black-&-white prints of letters and so forth, consider a mono laser printer (which cost from around £250).

Business use: Fast, networkable mono lasers cost from £500. Decent colour lasers will set you back at least £1,000. Design studios should consider a colour proofer – available from HP and Epson.

Multifunction devices: Companies such as HP and Lexmark offer all-in-one devices that include a printer, scanner, copier and fax. These save desk space, but aren't the best alternative at each of their functions.

Remember to find out the price of **consumables**. An inkjet can get through a cartridge in just a few months. Macworld tests for how many high-colour pages you'll get out of a cartridge, so check our product round-ups.

★★★/6.5	**Wireless Mouse**, Apple, *0800 039 1010*, £59. Bluetooth mouse. Lacks a scroll-wheel.	*Dec 2003*
★★★★/8.8	**Wireless Optical Desktop Elite Executive Edition**, Microsoft, *0870 207 7377*, from £99. All-singing, all-dancing keyboard.	*Jan 2004*
★★★★/8.9	**Wireless Optical Mouse 2.0**, Microsoft, *0870 207 7377*, £39. Super-smooth scrolling; scrolls sideways; three-buttons.	*Jan 2004*

PDAs

Personal digital assistants and related third-party hardware and software.

★★★★/8.0	**Clie PEG-NX70V**, Sony, *020 7365 2947*, £527. PDA offering stereo sound, and Memory Stick and CompactFlash slots.	*May 2003*
★★★★/7.5	**Tungsten E**, Palm, *0118 927 8700*, £149. Affordable, no-frills PDA with SD-card slot	*Expo 2003*
★★★★/8.7	**Tungsten T3**, Palm, *0118 927 8700*, £329. Bluetooth-compatible PDA with big screen and multimedia capabilities.	*Expo 2003*
★★★★/8.0	**Zire**, Palm, *0118 927 8700*, £88. Inexpensive PDA with rechargeable batteries.	*May 2003*

PRINTING

Inkjets, lasers, workgroup, thermal wax, dye sublimation, solid ink and software solutions.

All-in-one printer, scanner, copiers *(All prices include VAT).*

★★★★/8.9	**PSC 1205,** Hewlett-Packard, *08705 474 747*, £99. Compact, affordable, relatively fast all-in-one offers good quality photos.	*Sept 2003*
★★★★/8.9	**PSC 2175,** Hewlett-Packard, *08705 474 747*, £169. Fast all-in-one with six-ink option for even better photo quality.	*Sept 2003*
★★★/6.8	**Stylus CX3200**, Epson, *0800 200 546*, £149. All-in-one printing, scanning and faxing.	*Jan 2003*
★★★★/7.4	**x1150**, Lexmark, *0870 444 0044*, £79. Affordable, good-looking but very slow all-in-one.	*Sept 2003*
★★★★/8.2	**x5150**, Lexmark, *0870 444 0044*, £129. Affordable, good-looking but slow all-in-one.	*Sept 2003*

Consumer/entry-level pro *(All prices include VAT).*

★★★★/8.3	**DeskJet 5150**, HP, *08705 474 747*, £89. A4 inkjet that excels at colour photos; optional six-colour cartridge.	*Nov 2003*
★★★★/8.9	**i450**, Canon, *08705 143 723*, £99. Low-price colour A4 inkjet that outputs great quality for the price.	*Sept 2003*
★★★★/8.6	**i470D**, Canon, *08705 143 723*, £179. A4 inkjet that outputs great quality, and includes memory-card reader.	*Sept 2003*
★★★★/8.9	**i6500**, Canon, *08705 143 723*, £339. Great A3+ photographic output, very fast and quiet.	*Sept 2003*
★★★★/8.6	**i905D,** Canon, *08705 143 723*, £250. A4 photo-printer. Relatively speedy and prints on CDs, but colour profiles need improving.	*March 2004*
★★★★/8.4	**i965D,** Canon, *08705 143 723*, £250. As i905D but much faster. Lacks the i905's computerless printing capabilities.	*Oct 2002*
★★★/6.6	**P-440**, Olympus, *020 7253 2772*, £399. Expensive A4 inkjet. Speedy, but print-quality and colour-matching are lacklustre.	*March 2004*
★★★★/8.3	**Photosmart 7960**, HP, *08705 474 474*, £249. A4 inkjet. Decent colour reproduction, but expensive and rather slow.	*March 2004*
★★★★/8.7	**S900**, Canon, *08705 143 723*, £329. Edge-to-edge colour A4 inkjet that's fast and outputs decent colour.	*Oct 2002*
★★★★/8.7	**S6300**, Canon, *08705 143 723*, £379. Colour A3+ inkjet offering easy-to-achieve colour accuracy and economic ink usage.	*Oct 2002*
★★★★/8.3	**Stylus C60**, Epson, *0800 200 546*, £79. This entry-level 1,400dpi model is slow – but offers stunning output for your money.	*Oct 2002*
★★★★★/9.0	**Stylus C42UX**, Epson, *0800 200 546*, £59. Slow, but offers spectacular colour quality for the price.	*Oct 2002*
★★★★/7.7	**Stylus C80**, Epson, *0800 200 546*, £149. Entry-level 2,800dpi model that uses pigment inks for better output on plain paper.	*Oct 2002*
★★★★/8.3	**Stylus Photo 890**, Epson, *0800 200 546*, £169. Quality edge-to-edge A4 colour inkjet that's also fast.	*Oct 2002*
★★★★/8.7	**Stylus Photo 895**, Epson, *0800 200 546*, £179. Same as the 890 but with extra features for digital photographers.	*Oct 2002*
★★★★/8.9	**Stylus Photo 830U**, Epson, *0800 200 546*, £99. A photo printer for £99 is a great deal – especially when output is outstanding.	*July 2003*
★★★★/8.1	**Stylus Photo 925,** Epson, *0800 200 546*, £249. Doesn't need a computer to print from memory cards.	*Jan 2003*
★★★★/8.6	**Stylus Photo 935,** Epson, *0800 200 546*, £229. Top-quality output, six-colour inks, standalone printing.	*Sept 2003*
★★★★★/9.0	**Stylus Photo 950**, Epson, *0800 200 546*, £379. The edge-to-edge A4 950 can print on CDs, and paper rolls. Classic only.	*Oct 2002*
★★★★/8.9	**Stylus Photo R300**, Epson, *0800 200 546*, £129. Six-colour A4 inkjet. Computerless prints, excellent colour. Detail could be better.	*March 2004*
★★★★/7.6	**Stylus Pro 7600**, Epson, *0800 200 546*, £2,814. Excellent image quality and print speed for a wide-bodied printer	*Feb 2003*
★★★/5.5	**Z705**, Lexmark, *0870 444 0044*, £59. Affordable A4 inkjet that sadly lacks in speed and output-quality.	*March 2004*
★★★★/8.2	**z705 Photo JetPrinter**, Lexmark, *0870 444 0044*, £59. Affordable but very slow.	*Sept 2003*

Professional *(All prices exclude VAT)*

A3 colour lasers

★★★★/7.1	**AcuLaser C8600PS**, Epson, *0800 200 546*, £3,879. Slow yet high-quality graphics-oriented A3+ colour laser.	*May 2003*
★★★★/8.8	**Elite Color 16,** GCC, *020 8380 6870*, £1,399. Bargain-priced, duplexing high-quality colour laser printer.	*Expo 2003*
★★★★/8.7	**C752n**, Lexmark, *0870 444 0044*, £1,879. A4 colour laser that offers decent-quality prints at a fair speed.	*Expo 2003*
★★★★/8.7	**C9500**, Oki, *0800 917 6015*, £4,869. Super-fast A3 laser ideal for the most demanding office environment.	*May 2003*
★★★★★/9.1	**CL30**, Xanté, *0870 742 0802*, £4,249. Feature-laden graphics A3 laser printer that is both speedy and well-priced.	*May 2003*
★★★★★/9.0	**PlateMaker 4**, Xanté, *0870 742 0802*, £4,499. Complex, quality mono laser printer for producing computer-to-plate plates.	*July 2003*
★★★★★/9.0	**Phaser 6250n**, Xerox, *0870 241 3245*, £1,609. Fast, affordable colour laser printer that offers excellent quality	*Expo 2003*
★★★★/8.4	**Phaser 7700**, Xerox, *0870 241 3245*, £5,520. Speedy, well-priced graphics A3 laser.	*May 2003*

A4 colour lasers

★★★★/8.1	**AcuLaser C1900PS**, Epson, *0800 200 546*, £1,029. Multi-pass model that does well on speed, quality and price.	*May 2003*
★★★★/8.0	**AcuLaser C4000PS**, Epson, *0800 200 546*, £1,749. Single-pass laser that offer great output, but at a high price.	*May 2003*
★★★★/8.3	**C750**, Lexmark, *08704 440 044*, £2,059. Ultra-speedy single-pass laser that's also economical on consumables.	*May 2003*
★★★★/7.7	**HL-4000CN**, Brother, *0845 606 0626*, £1,780. Competitively priced single-pass model.	*May 2003*
★★★★/8.1	**HP 2500**, HP, *08705 474 747*, £1,155. Affordable, if slow, multi-pass A4 that offers decent output.	*May 2003*
★★★★/7.3	**HP 4600**, HP, *08705 474 747*, £1,752. Reasonably priced single-pass A4 model.	*May 2003*
★★★★/8.0	**Magicolor 2350**, Minolta-QMS, *01784 442 255*, £849. High quality at a superb price, but rather slow.	*May 2003*
★★★★/7.3	**Magicolor 3100**, Minolta-QMS, *01784 442 255*, £1,795. A slightly overpriced single-pass laser printer that offers quality output.	*May 2003*
★★★★/8.0	**C5300n**, Oki, *0800 917 6015*, £1,069. Well-priced single-pass A4 laser that's both speedy and of high quality.	*May 2003*
★★★★/8.0	**C7500n**, Oki, *0800 917 6015*, £2,919. Speedy, feature-rich single-pass A4 laser.	*May 2003*
★★★★/7.7	**Phaser 6200n**, Xerox, *0870 241 3245*, £2,010. Speedy, if expensive, single-pass A4 printer.	*May 2003*

★★★★/7.7	**Phaser 8200**, Xerox, *0870 241 3245*, £1,610. Solid-ink single-pass A4 laser offers good quality and is also well-priced.	*May 2003*
★★★★/8.4	**AW 1200**, Xanté, *0870 742 0802*, £799. Inexpensive 1,200dpi mono A3+ laser printer.	*Oct 2002*

SCANNING

Consumer and professional scanners

Consumer/entry-level *(Prices include VAT. All models USB)*

★★★★/8.2	**CanoScan D2400UF**, Canon, *08705 143 723*, £219. 2,400dpi A4 scanner offering transparency adaptor.	*Nov 2002*
★★★★/8.0/8.1	**CanoScan LiDE 20 / 30**, Canon, *08705 143 723*, £59; £79. Ultra-thin entry-level 600dpi and 1,200dpi A4 scanners.	*Nov 2002*
★★★★/8.6	**IRISPen II Executive**, IRIS,@ Softline *01883 745 111,* £129. Cheap, accurate pen scanner that works with any application.	*May 2003*
★★★★/8.1	**Perfection 1260**, Epson, *0800 220 546,* £79. Basic 1,200dpi A4 scanner offering optional £45 transparency adaptor.	*Nov 2002*
★★★★/8.0x	**Perfection 1660 Photo**, Epson, *0800 220 546,* £169. 1,600dpi A4 scanner offering a decent software bundle.	*Nov 2002*
★★★★/8.6	**Perfection 2400 Photo**, Epson, *0800 220 546,* £199. Capable 2,400dpi A4 scanner with built-in transparency adaptor.	*Nov 2002*
★★★★★/9.0	**ScanJet 3500c**, HP, *0870 547 4747,* £79. Great-value OS X-compatible 1,200dpi model.	*Nov 2002*
★★★★/8.6	**ScanJet 4670**, HP, *0870 547 4747,* £179. Innovative design; scans slides; easy storage, but cools looks mean a higher price.	*Jan 2004*
★★★★/7.0	**ScanJet 8200,** HP, *0870 547 4747,* £449. 4,800dpi resolution; transparency adaptor; USB 2.0. Overpriced.	*Nov 2003*
★★★/6.8	**ScanJet 8250,** HP, *0870 547 4747,* £749. 4,800dpi resolution; transparency adaptor; USB 2.0; document feeder. Expensive.	*Nov 2003*

Professional

★★★★/7.2	**ArtixScan 1100,** Microtek, *01327 844 880,* £1,408. Overpriced SCSI-2, 1,000dpi, 42-bit A4 scanner.	*Expo 2002*
★★★★★/9.0	**ArtixScan 1800f,** Microtek, *01327 844 880,* £1,799. 1,800-x-3,600dpi A4 flatbed giving unbeatable scan quality .	*July 2003*
★★★★/8.3	**Expression 1680 Pro**, Epson, *0800 220 546,* £895. Quality USB/SCSI 1,600-x-3,200dpi, 48-bit A4 scanner, but lacking FireWire.	*Expo 2002*
★★★★/7.9	**Expression 1640XL Pro**, Epson, *0800 220 546,* £2,219. SCSI/USB 1,600-x-1,300dpi, 42-bit A3 model that lacks FireWire.	*Expo 2002*
★★★★/8.9	**PowerLook 1120,** Umax, *0870 906 4400,* £849. FireWire 1,200-x-2,400dpi, 42-bit A4 scanner offers great balance of features.	*Expo 2002*
★★★★/7.8	**PowerLook 2100XL,** Umax, *0870 906 4400,* £999. SCSI-2, 42-bit A3 scanner offers modest resolution of 800-x-1,600dpi.	*Expo 2002*
★★★★/7.0	**ScanJet 8290,** HP, *0870 547 4747,* £1,449. 4,800dpi; transparency adaptor; 25ppm document feeder; software is Windows-only.	*Nov 2003*
★★★★/8.8	**ScanMaker 9800XL** Microtek, *01327 844 880,* £1,748. FireWire/SCSI-2/USB 2.0, 1,600-x-1,300dpi, 48-bit A3 scanner.	

Film scanners *(All prices include VAT)*

★★★★/7.8	**SmartScan 2700,** SmartDisk, *01252 530 960,* £189. Easy to use, inexpensive 2,700-pixel USB film scanner.	*July 2003*
★★★/6.7	**SmartScan 3600,** SmartDisk, *01252 530 960,* £189. 3,600-pixel FireWire film scanner that suffers from limited dynamic range.	*July 2003*
★★★★/8.0	**Dimage Scan Dual III,** Minolta, *01908 200 400,* £299. 2,820dpi Film scanner offering excellent dynamic range and colour fidelity.	*July 2003*
★★★★/8.5	**Dimage Scan Elite II,** Minolta, *01908 200 400,* £549. 2,820dpi FireWire film scanner with Digital ICE and GEM technologies.	*July 2003*

If you need to get printed images into your Mac, but you don't have a digital camera or want to put your old photos on the Web, you need a scanner. Before buying a scanner you must consider the final output you're aiming for. If your job is for a glossy magazine, then a high-resolution drum scanner is what you need.

It's more likely, though, that that kind of scanning would be done by a pre-press house or a bureau. Some **high-end** flatbed scanners are actually approaching drum-scanner quality. Some professional scanners require a SCSI interface, so new Macs will require that a SCSI card be added. However, manufacturers are now adding FireWire and USB 2.0 interfaces to their top scanners.

You can buy a dedicated **slide scanner** or attach an optional slide tray to your flatbed. Some scanners have neat internal trays for ease of use.

If your needs are less great, there are many fair-quality **low-end** scanners at unbelievably cheap prices. Again, claims for quality are often based on resolution. Look at the optical resolution rather than the interpolated resolution, as interpolation is just a process of digitally enlarging the scan. Make sure that the connection (USB, SCSI or FireWire) is right for your Mac. Scanners often come with bundled software to let you manipulate the images once you have scanned them.

STORAGE & UPGRADES

Hard drives, CD, DVD, removable solutions, servers, and processor-upgrade cards

Servers

★★★★/8.0	**Xserve,** Apple, from £2,399 including VAT. Apple's easy-to-manage enterprise server is well-placed to compete with PC solutions.	*Oct 2003*

Network Attached Storage

★★★★/8.5	**Max,** CMS, *01256 681 246,* from £1,999. Fast and robust storage that's easy to use.	*Jan 2003*

Hard drives

★★★★/8.2	**ABSplus,** CMS, *01256 681 246*, from £209. Portable FireWire backup solution.	*Jan 2003*
★★★★/8.8	**Big Disk 800,** LaCie, *020 7872 8000*, from £559. High-capacity FireWire 800 hard drives: 400GB (7,200rpm), 500GB (5,400rpm).	*Aug 2003*
★★★★/8.5	**Caviar WD2000,** Western Digital, @ Dabs, *www.westerndigital.com,* £201. Cheap, huge 200GB EIDE drive.	*June 2003*
★★★★/8.4	**Cobra 800,** EZQuest @ Channel Dynamics, *0870 60 70 540*, from £245. 7,200rpm FireWire 800 hard drive: 120/200/250GB.	*Aug 2003*
★★★★/8.5	**Crossfire 120GB,** SmartDisk, *01252 530 960*, from £153. FireWire/USB 2.0 hard drive. Compact, good software, but not too speedy.	*Expo 2003*
★★★★/8.3	**Desktop Hard Drive,** SmartDisk, *01252 530 960*, from £139. 7,200rpm FireWire hard drive: 80/120GB.	*April 2003*
★★★★/8.3	**Fire800,** WiebeTech @ Technical Earth, *020 8450 0303*, from £249. Reasonably priced 120/180/240GB. FireWire 800 drives.	*Aug 2003*
★★★★/8.5	**HDD 250,** Iomega, *www.iomega.co.uk*, £309. Fast 250GB FireWire hard-drive. Slow with USB 2.0, though.	*Expo 2003*
★★★★/8.8	**Ice Warrior 800,** Box Clever, *01525 240 188*, from £199. Affordable 120/200/250GB FireWire 800 hard drives.	*Aug 2003*
★★★★/8.3	**Media Bank HS-R,** Miglia, *0870 747 2988*, from £299. Dual hard-drive RAID array. FireWire 800 interface.	*March 2004*
★★★★/8.6	**One Touch 250,** Maxtor, *01923 712 448*, £329. Attractive FireWire-only hard drive with decent software bundle.	*Expo 2003*
★★★★/8.0	**PowerPlay Pro,** SmartDisk, *01252 530 960*, from £59. Handy collar-clip-sized 64MB USB storage and music player.	*July 2003*
★★★★/8.4	**Rover,** SmartDisk, *01252 530 960*, £59. Radio-controlled USB slide-show remote-control with 32MB of storage	*July 2003*
★★★★/8.5	**The Kube 500GB,** Box Clever @ Mac & More, *01525 240 188*, from £599. 5,400rpm FireWire RAID hard drive. Also 400/240GB.	*May 2003*
★★★★/8.0	**Xserve RAID,** Apple, £8,999 including VAT. Impressive 2.52TB server-storage solution.	*Oct 2003*

External CD/DVD drives (all inc. VAT).

★★★★/8.5	**Bravo Disc Publisher**, Primera, *01789 415 898 or 0870 870 1220*, from £1,700. CD/DVD duplicator that also prints disc labels.	*Oct 2003*
★★★★/7.7	**Boa FireWire DVD-RW**, EZQuest @ Channel Dynamics, *0870 607 0540*, £317. DVD-R that offers solid performance.	*May 2003*
★★★★/8.6	**d2 FireWire DVD-Rewritable Drive**, LaCie, *020 7872 8000*, £304. Includes CaptyDVD 1 Mac DVD-authoring software.	*May 2003*
★★★★/8.6	**Devideon**, Formac, *020 8533 2489*, £304. DVD-R that includes Devideon 2 Mac DVD-authoring software.	*May 2003*
★★★★/7.4	**DVD Revo FireWire SuperDrive 4x**, Cyclone, @ CompuB, *0800 018 6625*, £363. DVD-R that offers solid performance.	*May 2003*

Card readers (all inc. VAT).

★★★★/7.9	**Media Reader,** Belkin, *00800 2235 5460*, £89 (inc. VAT). Multi-format storage-card reader for dock-equipped iPods.	*Expo 2003*

Upgrade cards (all inc. VAT).

★★★/6.9	**PowerForce G4 ZIF 550/220,** PowerLogix, *www.powerlogix.com (see Int'l),* £259. For beige G3, blue-&-white G3, pre-AGP G4	*March 2003*
★★★/6.8	**PowerForce G4 Series 100 1GHz,** PowerLogix, *www.powerlogix.com (see Int'l),* £630*.* AGP and Gb Ethernet PMG4s, Cube	*March 2003*
★★★/6.6	**PowerForce Dual G4 800MHz,** PowerLogix, *www.powerlogix.com (see Int'l),* £690. AGP and Gb Ethernet PMG4.	*March 2003*
★★★/6.5	**PowerForce Dual G4 1GHz,** PowerLogix, *www.powerlogix.com (see Int'l),* £1,030. AGP and Gb Ethernet PMG4.	*March 2003*
★★★★/7.5	**Encore/ZIF G4 500,** Sonnet, *www.sonettech.com (see Int'l),* £259. Beige G3, blue-&-white G3, Pre-AGP G4.	*March 2003*

Hard drives: It's easy to add extra internal hard disks to Power Macs, but other Macs are better served with external drives. All new Macs come with FireWire connections, which are much faster than USB.

You can buy portable FireWire hard drives that you can carry around with you, and also larger, faster drives that sit on the desktop. Buy FireWire 800 drives if your Mac has this super-fast port. Go for the fastest rotational disk speed (measured in rpm), and divide the price by the number of gigabytes to find the price per GB. Buy as big as you can now, to save having to buy again later.

Removable disks: Apple has turned its back on the now defunct 1.4MB **floppy** (what do you think email is for?) but you can still add a USB floppy drive for about £60.

Zip drives are still used for backup. The 250MB Zip supports original 100MB disks, and the 750MB model reads and writes 750MB and 250MB disks, and reads all 100MB disks. Despite the convenience of the format, it 's relatively expensive and less popular now that most Macs have some kind of optical storage as standard.

Subscribers to Apple's .Mac services (£65 per year) get 100MB of **iDisk** Web storage space, which can be used to quickly move data around the world.

CD/DVD: Optical storage technologies (**CD-R**, **CD-RW**, **DVD-R** and **DVD-RAM**) have become increasingly viable alternatives as prices fall dramatically. While stable and cheap – a blank 650MB CD-R sells for 45p – writing to a CD or DVD-RAM can be slow. CD-R is a write-once technology. But, unlike Jaz and Zip disks, dishing out CDs to friends or clients isn't financially painful. Your best CD choice may be a CD-RW (rewriteable) drive, which is a CD-R drive with the added ability to handle rewriteable media.

DVDs can hold 5.2GB of data, and the drives can read standard CDs. Watch movies on your Mac and play the latest multimedia DVDs. SuperDrive Macs can record DVDs that will play in domestic players. Apple's **iDVD** tool makes Macs so much better than Windows PCs in this regard. **MW**

Andy Ihnatko

GarageBand is creating a whole new breed of spam: turgid, uninspired, pre-packaged songs. Enough, already!

GarageBanned

I'm going to start by discussing handguns. It distresses me that you folks might be relying solely on the works of Mr Michael Moore for your insights regarding how many guns we Americans have (none of your business), what we think of them (we think the instant we finally go ahead and buy that double action P7.45 ACP, Heckler & Koch will finally release the P9a with the squeeze-cocker grips, in a package that's 11 ounces lighter and 70 bucks cheaper), or how we use them (keep asking me stupid personal questions and you'll find out soon enough, chief).

We *are* fond of the things. It has nothing to do with how absolutely god-damned fantastic we look and feel when we wear one on our hip, and tuck another into our right sock, or when we twist that handle under our desk sharply to the right and a loaded pump-action shotgun drops right into our hands, either. A gun is just a wonderful way to cut straight to the heart of the perpetrat... er, problem.

'GarageBand will allow a huge swath of the population that thinks it has no musical ability to prove itself wrong. They're the kind of people who appear in the first two or three episodes of Pop Idol.'

And think about all the training that James Bond had to go through before he got to kill his first bozo. He wouldn't have been recruited for the job if he hadn't attended a top-tier university, for starters, and then he had to go and study for years, travelling to six of the seven continents. He would have hit all seven if Her Majesty's Secret Service had heard a rumour about a monk living in Antarctica who knew how to paralyze a man's heart with one tap of a penguin claw.

007-style assassinations may look good on film but a handgun is just more egalitarian. Find me a great-grandmother who can't even get the clock on her VCR to stop flashing "12:00" and I promise you that I can make her into an effective killer inside of 20 seconds. And nobody had to commission Rolex to design her a watch that ejects a curare-tipped pin, or train her on how to manually set the time to 8:49 to activate the mechanism.

No, clearly Michael Moore is barking up the wrong tree. Handguns all around, I say. If there's a consumer product that my government needs to control, it's GarageBand. I'm finally convinced that there are certain destructive forces that were never meant to be placed in the hands of so many untrained people. Particularly when its users obviously have no appreciation of the tremendous and irrevocable consequences of their actions.

Friends, we need envy Windows users no longer: we Mac users now have our own email virus. It's easily identified as an email with a GarageBand or .MP3 file attachment. If you receive such an attachment, do not open it. If you do, the results will be immediate and devastating: you will hear a close friend's 38-channel all-strings orchestration of "Love Theme From Titanic." If you're lucky. Two days after GarageBand was released, I received a special version of "Norwegian Wood," recorded by my cousin using the only two guitar chords he knew. I'm fairly sure that when The Beatles finally reunite, the first thing the group will discuss is how to wreak vengeance upon poor Frank from beyond the grave. John and George were pacifists and Paul's a veggie, but trust me: I'm sure they won't be above manipulating Ringo into re-animating his remains and inflicting a little Night Of The Living Dead-style retribution.

Don't get me wrong. I'm happy that my friends and associates are having fun with music. I'm just asking for a little self-control. If you want to send me a song you've recorded, please follow these few basic rules of etiquette:

Don't record any song that I actually like It's really unlikely that your performance of The Who's "Baba O'Reilly" is going to be much better than Pete Townsend's.

Think twice before sending a song you've written You'd think that this is the way to go; I've never heard "She Wrote The Cheque And My Poor Heart Cashed It" so I have no idea of whether you're screwing it up or not. But there's a reason why I don't read your weblog anymore. You keep telling me things that you should more properly be telling your psychiatrist, and it just creeps me out. Suffice to say that you have my sympathies regarding your recent breakup, but only up to the point when you set it all to music.

S/he who lives by the loop, dies by the loop Have you ever sent out a CV that was formatted with Microsoft Word's default CV template? Of course not. That'd be like showing up for the job interview wearing a clip-on tie – the fact that everyone else is using it marks you as the fraud of society that you are. At this writing, GarageBand has only been out a few weeks, but mark my words: "70s Ballad Piano 1" is destined to become the clip-on tie of demo tapes.

Bottom line? Stick to public-domain songs just to be safe. You really can't muck up "Greensleeves" or "Theme From 'Hawaii Five-Oh'" too badly.

Now, I don't want you all to think that I'm against GarageBand as a whole. It's brilliant software, allowing a huge swath of the population that thinks it has no musical ability to prove itself wrong. It's the *remaining* swath that bothers me. They're the kind of people who appear in the first two or three episodes of Pop Idol.

At any rate, GarageBand is good for Apple. It's been said that the key to any successful technology is to somehow tie it into pornography. Witness the success of the VHS cassette, the Internet, and the first photocopier big enough to put somebody's bottom on.

Following that logic, GarageBand will turn out to be the biggest success Apple's ever had. iMovie allowed millions of camcorder owners to edit their own porno tapes. Finally, they can create an appropriate musical score for the things. MW